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EXTRACORPOREAL CIRCULATION IN A COMMUNITY GENERAL HOSPITAL*

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TOTAL HEART-LUNG BYPASS, for limited periods of time, with the aid of an extracorporeal circulation, is now well established clinically, and its success in university as well as larger community hospitals has been reported.¹⁻⁷ By this method, unhurried, intricate operations within the heart can be performed in a relatively bloodless field, affording relief to a growing number of patients suffering from a variety of congenital and acquired cardiac lesions.

Recent experimental and clinical evidence^{8,9} suggests that partial cardiopulmonary bypass will soon broaden the scope of extracorporeal techniques in the management of certain reversible diseases of the heart and lungs. Because of the increasing potential of a heart-lung machine, both as a clinical and research tool, an extended program for study and utilization of extracorporeal circulation was initiated at the Rhode Island Hospital in June 1958.

The primary objectives of the study were: (1) to evaluate and modify the design of various components of available pump-oxygenators, in order to adopt a dependable system suitable for clinical use, (2) to train a team of cardiovascular surgeons, cardiologists, anesthesiologists, nurses and technologists in the methods essential for success in the clinical operation of a pump-oxygenator, and (3) to utilize the apparatus and personnel for the treatment of human patients.

This is a preliminary report which is concerned with our early experimental and clinical experi-

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ence in using a pump-oxygenator for open-heart surgery.

Description of the Apparatus

The heart-lung machine, ultimately selected for experimental and clinical use at the Rhode Island Hospital, evolved from a variety of components which were repeatedly modified and improved (Figures 1a, b). After gaining the necessary experience in using the apparatus, we studied several methods of collecting the venous return and flow patterns through the machine. Repeated use of the apparatus in the laboratory brought to light many of its mechanical shortcomings. Necessary modifications were made to increase its reliability and safety.

The pump-oxygenator,* currently employed clinically, consists essentially of four separate components: (1) a venous collecting reservoir, (2) a coronary sinus and cardiotomy return pump and reservoir, (3) an oxygenator and (4) an arterial pump (Figure 2).

A one-liter calibrated collecting reservoir is located approximately 40-60 cm. below the level of the operating table. The entire venous return from the experimental subject or patient is drained, by gravity, through separate plastic tubes, and enters the bottom of the reservoir, under a column of blood. This method of collection minimizes the air-blood interface, and significantly diminishes turbulent flow. A catheter from the left atrium, used to prevent pulmonary vascular overloading, also connects via plastic tubing to this venous collecting reservoir. This method of blood collection is similar to one recommended by Kolff.¹⁰

During cardiotomy, blood aspirated from the coronary sinus or cardiotomy is returned to the machine by a roller pump. It then flows through a series of five stainless steel screens, stacked in a stainless steel cylinder, which have previously been coated with Dow Corning anti-foam A. The foamed blood is returned to a fluid state when it contacts the silicone oil and flows gently down the side of the glass coronary sinus reservoir. This reservoir

*Constructed for us by the Mark Company, Randolph, Massachusetts.

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was designed by Doctor Robert Gross¹¹ who has proven its effectiveness both experimentally and clinically. A blood level of 1 to 2 cm. is constantly maintained in this reservoir to permit any residual fine bubbles to rise to the surface. The volume of blood recovered in this manner is easily ascertained from the calibrated cylinder and an equal amount of fresh heparinized donor blood is delivered to the venous reservoir to maintain a constant level. Recovered foamed blood is allowed to recirculate through the system only if its volume exceeds 500 cc. or the period of cardiotomy exceeds 15 minutes.

Blood from the venous reservoir flows by gravity into the oxygenator or artificial lung. The basic principle employed is the exposure of a thin film of blood to an oxygen atmosphere on a series of silicone coated stainless steel discs .6 mm. in thickness and 11.8 mm. in diameter. The discs are mounted 4.5 mm. apart by means of stainless steel spacers on a central rotating shaft. The disc assembly is supported, within a pyrex glass cylinder 13 cm. in diameter, by gasketed stainless steel end-plates. The length of the cylinder used (12, 18 or 21 inches) varies with the size of the patient and the flow requirements. This method of oxygenating blood was introduced by Björk¹² and subsequently modified by Kay and Cross.¹³

The shaft and discs are rotated at a speed of 120 r.p.m. by an electric motor through a flexible cable.

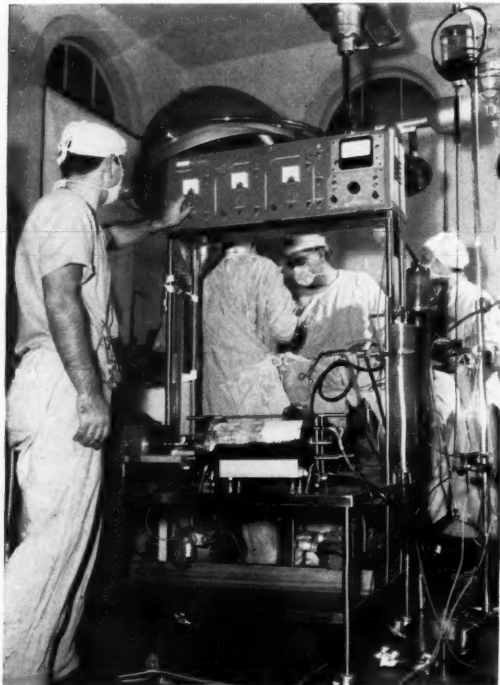


FIGURE 1a

a. Original Pump-oxygenator employed experimentally in the laboratory.

Blood from the venous reservoir is introduced at the bottom of the venous end-plate and is removed from a comparable point at the opposite end of the oxygenator cylinder. Rotation of the discs effectively prevents channeling of the blood along the bottom of the cylinder, and when properly operated there is no foaming or bubbling of the blood. The oxygenator is primed with sufficient blood to immerse the discs one and $\frac{5}{8}$ inches. A mixture of oxygen and carbon dioxide is delivered through the entire length of the oxygenator through two stainless steel tubes. The tubes are perforated at appropriate intervals so as to supply the gas mixture to each pair of discs. In the small 12 inch oxygenator, with the discs rotating at 120 r.p.m., the surface area of blood exposed to oxygen is approximately 108 square meters per minute. The entire unit is siliconized and autoclavable. Blood flowing through the oxygenator is warmed by an electrically heated aluminum block. A telethermometer temperature probe in the outflow tract of the oxygenator automatically controls the heat in the aluminum block through a transistor relay. A simple lever lowers the heating block when blood is not flowing through the oxygenator cylinder to prevent damage to blood constituents by overheating.

Blood is withdrawn from the bottom of the arterial end-plate of the oxygenator by a pump of the DeBakey-Gibbon type* which we have modi-

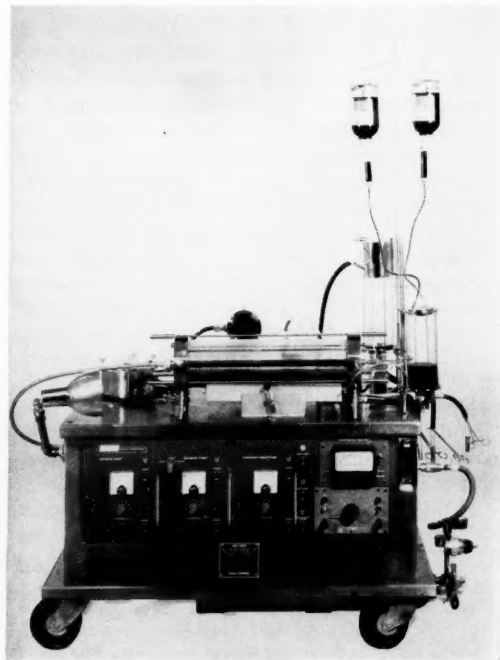


FIGURE 1b

b. Refined Pump-oxygenator currently employed clinically.

fied. The pump propels the blood by compressing a plastic tube with a centrally pivoted roller. The arm of the roller can be adjusted with precision and the degree of compression of the tube can be varied from zero to full occlusion. Valves are not necessary since each arm of the roller takes up where the other leaves off. The flow is pulsatile but of low amplitude. At full occlusion the output of this pump is constant against variable pressure heads.

Blood then passes through a filter and bubble trap** and is returned to the patient. All the components are housed in a heavy duty, completely enclosed, stainless steel chassis. A trained technologist easily operates the entire apparatus from a well-designed electrical control panel. A team cardiologist supervises the technologist and the overall problem of clinical perfusion.

Methods

Three initial groups of experiments were performed. In the first group, nine pigs, weighing from 50 to 98 pounds, were anesthetized with intravenous nembutal and perfused with the heart-lung machine. Our objective in each experiment was to study the performance of various components of the apparatus and to train the technical personnel in its operation. All animals were deliberately sacrificed at the conclusion of the experiment. The preliminary lessons learned in these experiments led to our modifying the apparatus, and provided the experience required for planning the subsequent experimental work.

The second group of acute experiments was performed employing unselected mongrel dogs weighing 45 to 51 pounds. Our purpose in this series of experiments was to perfect the technique of the team, working together, as well as to further test the reliability of the earlier model heart-lung machine. After fifteen such experiments, we felt that our method of cannulating the great vessels of the animal and operating the apparatus was sufficiently advanced to undertake a limited number of survival experiments.

For the third group of experiments our objectives were: (1) to conduct successful experimental total body perfusion in dogs for varying periods of time, in a manner entirely comparable to that which would ultimately be employed clinically in the operating room and, (2) to study the chemical, hematological, and other physiologic alterations produced in animals by the methods and apparatus we employed. These physiological studies were essentially the responsibility of the cardiologists who participated in all experiments.

Nineteen unselected mongrel dogs, weighing 42

*Custom machined according to our specifications by Mr. Raymond C. Hill and George Clentimack, North Attleboro, Massachusetts.

**Designed by Dr. Robert E. Gross, Boston, Massachusetts.

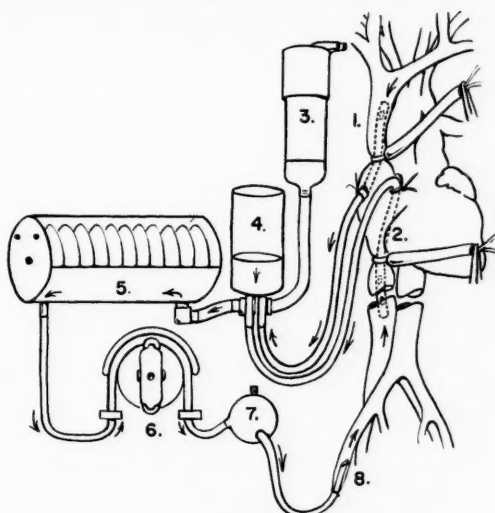


FIGURE 2

Schematic drawing of extracorporeal circuit: 1. superior vena cava cannula, 2. inferior vena cava cannula, 3. coronary sinus and cardiomy return reservoir, 4. venous collecting reservoir, 5. rotating-disc oxygenator, 6. roller-pump, 7. filter and bubble trap, and 8. arterial cannula.

to 69 pounds, were subjected to total body perfusion in a third category of experiments. The animals were anesthetized with intravenous nembutal, in a dosage of 20 to 25 mgm. per kilogram of body weight, and intubated. The anesthesiologist controlled the respirations throughout the operative procedure except during the period of cardiopulmonary bypass. The animal's chest was opened either through a right 4th intercostal space or a median sternal splitting incision. Simultaneously, the femoral artery and vein were exposed in the groin. Meticulous attention was paid to hemostasis since all animals were to be anticoagulated. The inferior vena cava was cannulated with as large a plastic catheter as could be introduced through the common femoral vein. The superior vena cava was cannulated with a similar sized catheter, introduced through a stab wound in the right atrial appendage and secured with a purse string suture. Both vena cavae were encircled with umbilical tape close to where they entered the atrium. A stainless steel cannula* was introduced into the common femoral artery and secured with an encircling ligature. At the start of the cannulation, the animal was anticoagulated with Heparin (1 mgm. per pound body weight). In most experiments, the left heart was decompressed at the beginning and end of the perfusion, by a catheter introduced into the left atrium, through the left atrial appendage or the

*Cannulae together with tapered adapting plastic catheters generously supplied by the Davol Rubber Company, Providence 2, Rhode Island.

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right inferior pulmonary vein. All catheters were connected to the heart-lung machine via Mayon or Tygon plastic tubing with an inside diameter of $\frac{3}{8}$ inch.

The mean arterial pressure and the central venous pressures were recorded continuously through polythene catheters which were inserted through the opposite femoral vessels and connected to Sanborn transducers and a Sanborn Polyviso Recorder. The electroencephalogram (single lead, brow to occiput) was monitored throughout the perfusion. Blood for chemical and hematological studies was drawn at the appropriate intervals throughout each perfusion. Samples were also drawn during the post-operative course of the surviving animals.

Blood for priming the apparatus was collected immediately before each perfusion from donor animals who had been lightly anesthetized with ether. The blood was collected, by gravity without vacuum, in siliconized bottles containing 25 mgm. Heparin for each 500 cc. of blood. The duration of total perfusion varied from 17 minutes to 1 hour and 7 minutes. The shorter perfusions were associated with our efforts to determine the bypass requirements for certain specific types of intracardiac procedures such as creating and closing atrial septal defects. The majority of the animals were perfused for 30 minutes or more and eight animals were perfused for 1 hour. Cardiac arrest, by the Melrose Method¹⁴ utilizing 2.5 per cent potassium citrate in whole blood, was employed in seven experiments. A right ventriculotomy or atriotomy was performed in all but two animals.

At the completion of total cardiopulmonary bypass the Heparin effect was neutralized by Polybrene.* The amount of Polybrene given was calculated to equal twice the Heparin dose. Half of the Polybrene was administered rapidly over a period of 5 to 10 minutes. The remaining dose was then infused slowly with the aid of a microdrip* over a period of 30 minutes. Venous clotting times were performed at intervals of 10 minutes and the Polybrene drip discontinued when the clotting time returned to normal.

Results

Among the 19 animals subjected to survival experiments there were five that died during perfusion. These were animals whose heart action could not be resuscitated after the pump had been turned off. Refractory ventricular fibrillation occurred in all five animals. One instance of ventricular fibrillation followed elective cardiac arrest with potassium citrate. A second occurred in an animal who had had an anoxic arrest before the start of the operation. Although the heart had been suc-

cessfully resuscitated, its action had remained feeble throughout the perfusion. The remaining three instances were the result of air emboli due to technical errors.

Three animals died within two hours following total cardiac bypass. A technical error resulted in massive hemothorax accounting for one death. A second animal succumbed to a diffuse hemorrhagic diathesis. No obvious cause of death was found at postmortem in the third animal.

Two animals died at 12 and 27 hours post-operatively of pulmonary complications. All other animals survived the perfusions and are either alive at this time or have been deliberately sacrificed. Homes have been found for several animals and they are being kept as long-term survivors. It is interesting that five of the surviving animals were perfused for one hour.

Data concerning alterations in serum electrolyte, acid base balance, and hematology were collected in all our preliminary experiments. Our results, in general, confirm the findings of others.¹⁵⁻¹⁷ The electrolyte pattern of the blood was not significantly altered by total body perfusion. Variations in electrolytes tended to reflect the state of hydration of the animal or were the result of hemodilution by fluids used during the perfusion.

The acid base balance of the animal throughout the bypass period, in general, followed an orderly pattern and was predictable. At the onset of perfusion, a respiratory alkalosis was induced by the anesthesiologist by hyperventilating the animal. At flows approximating or slightly exceeding the resting cardiac output there was usually no significant change in the pH of the blood. However, the effects of anoxia or shock were apparent when difficulties were encountered which resulted in diminished or low-flow from the machine. Tissue metabolites, notably lactic acid, accumulated and resulted in a metabolic acidosis. When an appropriate sized oxygenator and high-flow (2.0 to 2.4 liters per M² body surface) were employed acidosis did not occur.

Our studies on the formed blood elements were directed toward eliciting evidence of trauma by the machine. Plasma hemoglobin levels and platelet counts indicated that our apparatus compared favorably with others being used successfully in other clinics. In general, the platelet counts were reduced by one-half the pre-perfusion value by a one hour perfusion and plasma hemoglobin varied from 35 to 150 mgm. per cent.

A normal systemic blood pressure was maintained by the pump when its output was adjusted to deliver 2.0 to 2.4 liters per M² body surface or 75 to 85 cc. per kilogram of body weight. When appropriate sized venous catheters were employed with the apparatus the central venous pressure rarely exceeded 5 to 10 mm. of Hg. The adequacy

*Generously supplied by Abbott Laboratories, North Chicago, Illinois.

of our oxygenator was demonstrated by consistent arterial oxygen saturations of 94 to 98 per cent at flows of 2.0 to 2.4 liters per minute. The relatively unchanged electroencephalograms at high-flows confirmed the ability of the pump to deliver an adequate amount of well-oxygenated blood to the brain.

Encouraged by our preliminary laboratory efforts, together with the lessons learned from other groups¹¹ after numerous animal experiments, we elected to employ the method clinically. Nonetheless, our animal experiments have continued without interruption to this date even though the technique has been clinically successful.

Clinical Case Reports

Case 1. J. C. (R.I.H. 609336). A forty-year-old woman was admitted on January 26, 1959 with severe congestive heart failure. She was said to have had rheumatic fever at age 11 but had remained relatively free of symptoms until 12 years before admission. At that time she developed congestive heart failure during her first pregnancy. Digitalis and salt restriction controlled her cardiac decompensation and in the ensuing years she had noted increasing dyspnea, palpitation and intermittent peripheral edema.

Examination disclosed a pale, orthopneic female with congested neck veins and marked peripheral edema. Blood pressure was 110/60 and the heart rate was 60 per minute. The heart was clinically enlarged. A harsh systolic murmur with an associated thrill was maximal in the second left intercostal space and was transmitted to the apex, back, and into the base of the neck. A softer early diastolic murmur was heard over the apex. The second pulmonic sound was loud.

Electrocardiography showed atrial fibrillation and evidence of right ventricular hypertrophy. Roentgenograms of the chest revealed enlargement of the left atrium and a prominent pulmonary artery segment. The hilar shadows were enlarged. Right heart catheterization showed a bi-directional interatrial shunt which was predominantly left to right. The mean pressure in the pulmonary artery was 42 mm. of Hg. and the total pulmonary vascular resistance was 6.9 Wood's units indicating a moderate but significant elevation.

On April 25, 1959, a transverse bilateral thoracotomy through the fourth intercostal spaces with transection of the sternum was performed. The superior vena cava was cannulated through the right atrial appendage and the inferior vena cava from below through an incision in the right common femoral vein. Both cannulae were connected to the pump-oxygenator. Arterial return was through a stainless steel cannula introduced into the right femoral artery. Complete heart-lung bypass was carried out at a flow rate of 3.5 liters per minute

for twenty-three minutes. The right atrium was opened widely. A large volume of blood trapped within the plethoric pulmonary circuit was aspirated within the first 20 seconds of open cardiomy and slowly returned to the pump-oxygenator. A large septum secundum defect, measuring 3 cm. in its long axis, was clearly visualized. Care was taken to avoid aspirating blood from the left atrium to prevent air embolism. Closure of the defect was accomplished with a double row of continuous silk sutures. The inferior caval tourniquet was momentarily released to permit the atrium to fill with blood and displace any trapped air. The atrium was closed with a running mattress suture of silk. The patient tolerated the procedure well. Her post-operative recovery was marred only by the development of a small area of pneumonitis at the right base which cleared with appropriate treatment. She was up walking on her seventh post-operative day and was discharged from the hospital three weeks later. Efforts to revert her rhythm to a normal sinus mechanism post-operatively were unsuccessful. However, after ten months she has a normal sinus rhythm, marked improvement in exercise tolerance, and a significant diminution of her heart size by X ray.

Case 2. P. L. (R.I.H. 616028). A six-year-old boy was admitted on May 16, 1959 because of easy fatigability and dyspnea. He had had a heart murmur since birth. Although his physical development appeared to be somewhat retarded, he had been free of symptoms until several months before admission.

Examination disclosed a small but well-nourished boy who was not cyanotic. Blood pressure was 110/68 and the heart rate was 92 and regular. A loud systolic murmur, radiating widely over the precordium, was heard best over the pulmonic area and a systolic thrill was palpable over the same area. The second pulmonic sound was diminished.

The electrocardiogram revealed right ventricular hypertrophy. A chest X ray showed an enlarged heart with a bulging pulmonary artery segment. Data obtained by right heart catheterization disclosed no evidence of an intracardiac shunt. The pressure in the right ventricle was markedly elevated at rest, 140/7 mm. Hg. The pressure in the pulmonary artery was 48/12 mm. Hg. This drop in pressure occurred at the level of the pulmonary valve, indicating pure pulmonary stenosis.

On May 23, 1959, the heart was exposed through a vertical median sternotomy incision. The pulmonary artery showed the typical post stenotic dilatation and a prominent thrill in the main pulmonary artery was palpable. The superior and inferior vena cavae were cannulated through the right atrial appendage. A stainless steel cannula was inserted into the right common femoral artery. After connecting all cannulae to the pump-oxy-

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generator, total heart-lung bypass was carried out for 17 minutes at a flow rate of 1.7 to 1.8 liters per minute. The pulmonary artery was incised vertically from just above the annulus for a distance of 2 cm. The valve orifice measured 2 mm. in diameter and there were three distinct fused rudimentary commissures. Each commissure was carefully incised to the annulus. The surgeon then inserted his finger through the opened valve into the right ventricle to ascertain that no subvascular obstruction existed. After allowing the right ventricle and pulmonary artery to fill with blood from the coronary sinus return, the pulmonary artery was closed using a continuous coapting suture of fine silk. The patient tolerated the procedure without incident and reacted while still on the operating table. His post-operative course was entirely uneventful and he was discharged on his twenty-third post-operative day. In the eight months following operation he has returned to full activity and is completely asymptomatic. The preoperative systolic murmur can no longer be heard.

Case 3: J. C. (R.I.H. 622472). A nine-year-old girl had had a heart murmur since infancy. Except for frequent upper respiratory infections during her first two years of life she had developed normally. Increasing dyspnea at play in the preceding year led to her admission on September 11, 1959.

Examination revealed a plump healthy appearing girl. Blood pressure was 104/70 and the heart rate was 80. The precordium was not deformed. A harsh systolic murmur could be heard over the entire anterior chest wall but was maximal at the left third intercostal space. A thrill was palpable over the same area. The second pulmonic sound was present but thought to be somewhat diminished.

The electrocardiogram revealed right and left ventricular enlargement. X-ray studies showed an enlarged heart with a prominent pulmonary artery segment. Cardiac catheterization disclosed a sharp fall in pressure from the right ventricle to the pulmonary artery, a systolic pressure gradient of 100 mm. Hg. The precise point in the outflow tract where this pressure drop occurred was thought to be the pulmonary valve. Oxygen saturation determinations showed no evidence of intracardiac shunt.

On September 19, 1959, the mediastinum was entered through a vertical median sternotomy. After opening the pericardium, it was apparent that the right ventricle was divided into two chambers beating out of phase with each other. The infundibular chamber expanded during early systole, then contracted during ventricular diastole. A distinct line of demarcation between the ventricle and the infundibular chamber was clearly visible. After cannulating the superior and inferior

vena cavae through the right atrial appendage and the right femoral artery, total heart-lung bypass was initiated at a flow rate of 2.6 liters per minute. The right ventricle was incised vertically through the area of infundibular stenosis. The pulmonary valve was normal. The parietal and septal bands of the crista supraventricularis were markedly hypertrophied and displaced downward, forming a musculo-fibrous obstruction in the mid-right ventricle. The aperture through this partition was approximately 2 mm. in diameter. Under direct vision, this obstructing ring was carefully trimmed away by sharp dissection until the infundibular and ventricular chambers became one. The incision in the ventricle was closed with a double row of continuous silk sutures. Total heart-lung bypass lasted 45 minutes and was well tolerated. The patient awakened on the operating table during the application of the dressing and complained that she was hungry.

The post-operative course was complicated by a small stitch abscess at the lower end of the anterior chest wound. A protracted low grade temperature ultimately responded to steroid therapy and was thought to be due to the post-cardiotomy syndrome. She was discharged on her thirty-ninth post-operative day, at which time her heart murmur was barely audible. In the four months since her operation, she has returned to full vigorous activity and is free of symptoms.

Case 4: L. M. (R.I.H. 627213). A fifty-three-year-old woman was admitted December 6, 1959 with intractable cardiac failure. She was known to have had mitral stenosis for 43 years. She had had three uncomplicated pregnancies and had been relatively free of symptoms until one and one-half years before admission. At that time, dyspnea, cough and peripheral edema responded to treatment with digitalis, mercurials and salt restriction. Three months before admission an effort to anesthetize her for the removal of several carious teeth was frustrated by the development of severe cardiac arrhythmias. Later she developed atrial fibrillation, a dry nonproductive cough and recurrent edema refractory to full doses of digitalis and diuretics. In spite of increasing dyspnea, it was of interest that the patient obtained maximum relief in her breathing by lying prone in bed. All other positions except sitting upright resulted in severe dyspnea and paroxysms of coughing.

Examination disclosed a small, thin, chronically ill woman lying on her abdomen in bed. Her nose, fingers and toes were cyanotic. Her neck veins were distended. There were rales at both lung bases. The heart was enlarged to the left. Blood pressure was 115/80 and the heart rate was 100 and totally irregular. A loud, high-pitched, squeaking murmur was heard along the left sternal bor-

der. A softer diastolic murmur was heard over the apex. The second sound in the pulmonary area was accentuated. The liver was felt five finger-breadths below the costal margin. There was pitting edema of the sacrum and the lower extremities.

An electrocardiogram showed atrial fibrillation with right ventricular hypertrophy. Fluoroscopy disclosed an enlarged heart with a prominent pulmonary conus, evidence of calcification in the region of the mitral valve and bilateral pleural effusion.

In spite of intensive medical treatment, the patient's symptoms became worse and it was the consensus that her prognosis was hopeless without surgical treatment. Since her mitral valve was known to be extensively calcified and the clinical findings suggested the presence of an occluding intra-atrial thrombus, open operation with the aid of a pump-oxygenator was elected. In preparation for the definitive cardiac operation, a tracheotomy was performed with the patient in a sitting position.

On December 19, 1959, a right thoracotomy through the bed of the resected fifth rib was performed. The caval and arterial cannulations were performed as were those described in Case 1. Total heart-lung bypass was carried out for one hour and 56 minutes. The left atrium was opened widely posterior to the interatrial sulcus. After emptying the left atrium of blood, a pedunculated thrombus, measuring 3x3x4 cm., was found attached to a thrombus filling the left atrial appendage. The mitral valve was extensively calcified and tightly stenosed. A gauze sponge was packed into the stenosed valve orifice to trap any thrombotic fragments and the friable thrombus was evacuated in several pieces. The orifice of the atrial appendage was then closed, from within the atrium, with a running suture of silk. A mitral commissurotomy was achieved under direct vision with the use of appropriate instruments. Although both the anterior and posterior commissures were adequately incised to the valve annulus, dense calcification in the region of the posterior commissure rendered the valve leaflets immobile.

The edematous atrial wall was closed with difficulty. After the circulation had been re-established, it was necessary to return to partial cardiopulmonary bypass several times in order to finally achieve a blood tight closure of the atrium. The patient tolerated the procedure well and was awake, responding to questions, as the last skin sutures were being placed.

Her post-operative course was gratifying in the first 24 hours. She was alert and co-operative. The serum electrolytes and pH showed no deviation from normal. Venous pressure varied from 10 to 15 mm. Hg. and systolic arterial blood pressure remained at 100 mm. Hg. Early on her second post-

operative day, however, she developed digital cyanosis with a progressive fall in blood pressure despite an adequate blood volume and normal blood chemistries. Death occurred abruptly 48 hours following operation.

Autopsy revealed no obvious anatomic cause of death. All suture lines were intact. The heart was enlarged, pale and flabby. Microscopically the left ventricular myocardium was infiltrated with fat. The cause of death was considered due to chronic left ventricular insufficiency.

Comment

Successful clinical use of a pump-oxygenator depends upon careful, painstaking preparation in the laboratory. Rapid evolution and development of new instrumentation requires constant modification and refinement of existing equipment and subsequent evaluation of these changes on animals in order to insure a clinically reliable pump-oxygenator. Even after a clinical program has been successfully launched, it is essential that the operating team, cardiologists and technologists continue to work together in the laboratory at weekly intervals if continued success in the operating room is to be assured.

With the development of any new technique for treating a disease or lesion, there is a natural tendency among practicing physicians to relate mortality to failure of the method. Thus, fatalities in open-heart surgery are frequently ascribed to the pump-oxygenator. Clearly, technical errors in cannulation and the operation of the heart-lung machine will sometimes result in death. In the hands of a properly trained team using high quality, thoroughly tested equipment, such errors should occur infrequently, if at all. On the other hand, sufficient experience in a number of active clinics has now accrued to indicate that the nature of the patient's cardiac lesion and the resulting physiologic alterations created by that lesion are the most important factors determining the outcome of the surgical correction.

There is now general agreement among surgeons and cardiologists that the success — or failure — of surgical repair of septal defects with long-standing left to right shunts depends upon the condition of the pulmonary vascular bed. When pulmonary vascular resistance results in a pulmonary artery pressure approximating or equal to the systemic aortic pressure with a consequent diminution in pulmonary blood flow, closure of the defect by any method, open or closed, imposes an overwhelming load on the right ventricle which may fail acutely. In the first patient reported above, this risk was clearly recognized and accepted. Correction of her defect was carried out successfully and her subsequent course suggests that her pulmonary vascular

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changes have reversed to some degree.

The limiting factors in effectively treating patients with calcific cardiac valvular disease are, the extent to which the valve can be opened and mobilized, and the myocardial reserve. Case 4 reported above represents a patient whose valve, although successfully opened, could not be mobilized to any great extent, even under direct vision. Moreover, her myocardial reserve was severely compromised. It is doubtful that the left ventricle could have successfully handled the increased stroke volume even if good mobility of the mitral valve had been restored. We have had similar experiences with certain Class IV patients operated upon by closed methods.

In children with isolated cardiac anomalies, such as those demonstrated in Case 2 and Case 3, the results of open correction are good and the risk is small. While correction of some of these defects has been achieved under hypothermia with a high degree of success, the method is generally unsuitable if unsuspected and more complicated anomalies are encountered at operation. This was clearly demonstrated in our third case operated upon for what was thought to be pure pulmonary valvular stenosis. At operation the patient was found to have a severe infundibular stenosis which required complete heart-lung bypass for effective correction.

SUMMARY

Extracorporeal circulation with the aid of a clinically reliable pump-oxygenator is an essential adjunct in treating certain cardiovascular lesions. Its employment in larger community hospitals is feasible and necessary. However, its successful clinical use requires careful and meticulous preparation in a suitably equipped animal experimental laboratory. It is also essential that the team utilizing the method continue to work together regularly in the laboratory if continued clinical success is to be assured.

The initial clinical experience with the use of a rotating-disc pump-oxygenator is presented. It is pointed out that while technical errors in performing whole body perfusion can sometimes result in a fatality, such errors should occur infrequently in the hands of a well-trained team employing thoroughly tested equipment. Of greater importance in determining success — or failure — is the nature of the patient's cardiac abnormality and the physiological changes resulting from the lesion.

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anesthesiologists who in rotation participated in the experimental work.

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DIET AND THE ABDOMINAL CRISIS IN ESSENTIAL HYPERLIPEMIA

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ESSENTIAL or idiopathic hyperlipemia is a relatively rare disease of fat metabolism characterized chemically by a marked increase in the total serum lipids, most predominately in the neutral fat fraction. Much interest has centered on this clinical state in the last few years, particularly from a metabolic and dietary standpoint. Approximately ninety cases have been reported in the literature.¹⁻⁶ One of the outstanding clinical features of the disease seen in over half the reported cases is the presence of recurrent abdominal pain sometimes closely simulating an acute surgical abdomen.³ The course of the disease has been significantly altered by diet.⁷ The following case illustrates the relationship of an abdominal crisis to diet and concomitant serum lipid changes. A short trial of steroid treatment and the effect on serum lipids is noted.

Case Report

R. J., a 25-year-old white male, was admitted in June, 1958 to the U. S. Naval Hospital at Newport, Rhode Island for evaluation of recurrent episodes of acute abdominal pain. The patient gave a history of recurrent attacks of abdominal pain, since age 15. The attacks occurred at intervals of ten to fifteen weeks and were characterized by severe stabbing, colicky pains in the right lower and right upper quadrants of the abdomen, lasting at times up to twenty-four hours in duration. At age 16, an exploratory laparotomy revealed "telescoped bowels." He was hospitalized subsequently on five different occasions, during which time repeated gastrointestinal X-ray studies were negative. In 1957, grossly milky serum was noted. The diagnosis of chronic relapsing pancreatitis was made, however there was no elevation of serum lipase or amylase. The patient's military service was punctuated by intermittent attacks of acute abdominal pain. On repeated examinations he was found to have grossly milky serum. Family history was unremarkable.

Physical examination revealed a slightly obese, well-developed, white male, approximately twelve

pounds overweight. Vital signs were normal. The skin showed no evidence of cutaneous xanthomata. Fundoscopic examination revealed creamy white streaking of the retinal veins-lipemia retinalis. The smooth, non-tender liver edge was palpable two finger breadths below the right costal margin. The spleen was not felt. The remainder of the physical examination was negative.

The laboratory studies on admission revealed an initial white blood count of 14,000. The serum throughout the entire hospital stay was grossly milky (Figure 1). Electrolytes were normal. Tests of hepatic, thyroid and renal function were normal. A glucose tolerance test was normal. Urinalyses, including porphyrin studies were negative. Repeated pancreatic studies including multiple determinations of the serum amylase and lipase were normal. Electrocardiogram was negative. Roentgenographic studies of the chest, gall bladder, upper gastrointestinal tract including small bowel, and the barium enema were within normal limits. There was no evidence of pancreatic calcification. Serum electrophoresis showed a slight increase in the alpha 2 and beta protein levels.

Figure 2 illustrates the pattern of the serum lipid changes as correlated with the amount and type of fat in the diet.

In the initial period the patient was maintained on a moderately low fat intake of 55-60 grams of fat per day. The serum remained grossly milky throughout the study regardless of the total fat intake. After twenty-four days the diet was changed to a high fat intake with 170 grams of total fat per day. After twenty-eight days, following a steady and progressive rise in the serum cholesterol, the patient developed an acute abdominal crisis lasting for approximately eight hours. During this period the patient complained of severe colicky pains in the right upper and right lower quadrants. Physical examination revealed generalized guarding with hypoactive bowel sounds. The liver remained palpable two finger breadths below the right costal margin at the same level as prior to the attack. Flat and upright films of the abdomen showed a reflex ileus pattern. The serum cholesterol preceding the abdominal attack by approximately ten hours was 630 mgm. per cent. Three days later it was 200 mgm. per cent. Unfortunately

continued on next page

fractionated serum lipid level studies were not available until after the abdominal crisis. The third phase of the study was begun on hospital day 57 shortly following the acute abdominal crisis and consisted of a high unsaturated fat diet (170 grams) approximately 60% unsaturated fatty acid. During this period special lipid studies were obtained showing unequivocal evidence of essential hyperlipemia. The patient remained asymptomatic throughout this entire period although the neutral fats and total lipids showed striking elevations. Over the last phase of the study, the patient was fed a low-fat diet (25-30 grams fat). He maintained an asymptomatic state as the serum lipid levels diminished, except for the serum phospholipids which seemed to follow an inverse relationship to the serum total lipids and neutral fats. During this final stage after following the low fat diet for two weeks Prednisolone was added to the regimen in a dosage of 30 mgm. daily for a period of fourteen days. There was no change in the clinical picture nor in the gross turbidity of the serum; however, there was a general downward trend in the serum lipid levels most marked in a precipitous fall of the phospholipids.

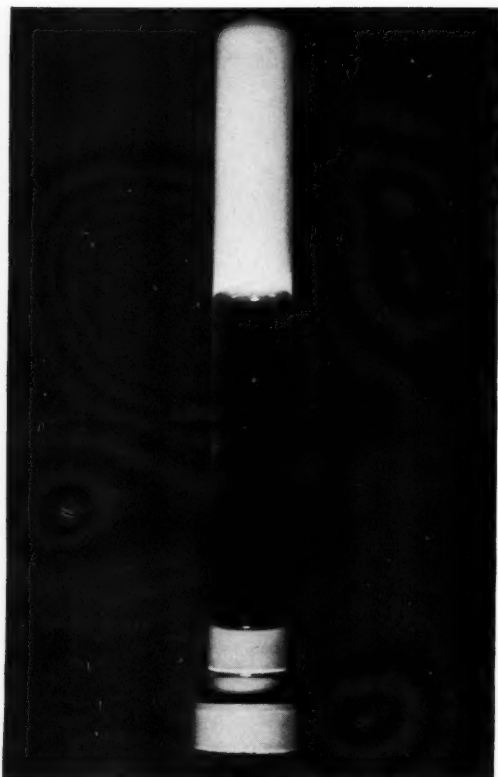


FIGURE 1
Milky appearance of the patient's fasting serum.

Comments

One of the more intriguing features of essential hyperlipemia is the recurrent abdominal crisis. There is no doubt that in some patients bona fide pancreatitis has been established.⁸ Klatskin and Gordon² concluded from their well-studied case that the pancreatitis was the result not the cause of essential hyperlipemia. They postulated that the alteration in the physical state of the serum might have led to vascular occlusions in the visceral vessels particularly those going to the pancreas and liver. Sudden enlargement of the liver and spleen has been reported during an abdominal attack.⁹ Our patient showed no increase in hepatomegaly during the abdominal crisis nor was there any evidence chemically of pancreatitis. The attack characteristically followed a steady progressive rise in the serum lipids manifested by a spiking rise in the serum cholesterol.

It has been shown by previous observers that the total fat in the diet has a direct bearing on the degree of hyperlipemia and the abdominal crises. Holt was able to precipitate attacks when raising the serum lipids to eight per cent.⁹ It is interesting to note that the high fat diet with the large proportion of unsaturated fatty acids did not precipitate an abdominal crisis in our patient even though the serum total lipids and neutral fats showed marked elevations. Although the cholesterol rose, there was no sudden peaking as was seen on the normal fat diet.

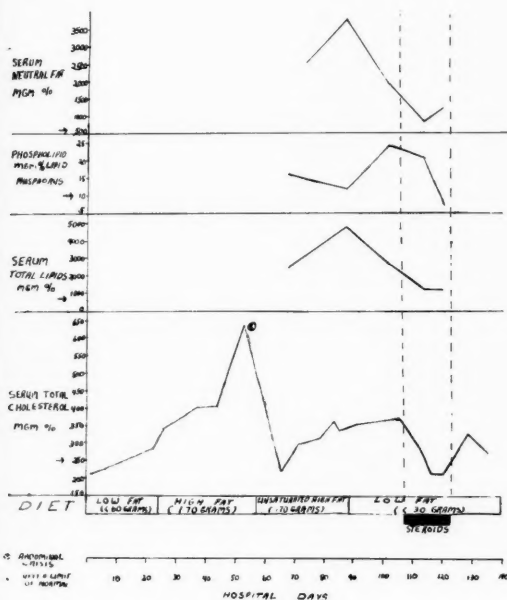


FIGURE 2
Correlation of the patient's serum lipid levels with the total fat in the diet.

Sustained low fat diet is the choice of treatment in this disease. Recently, other approaches have included heparin and chlorpromazine with beneficial effects.¹⁰ With regard to steroids, animal experiments have shown that these hormones play a role in blood lipid regulation by a direct action on lipid or lipoprotein metabolism. However, studies in man have been inconclusive.^{11,12} Klatsin and Gordon treated their patient during a period of fat restriction with corticotrophin and reported an increase in serum turbidity without very much change in the serum cholesterol or fatty acid levels.² The phospholipids, neutral fats, and total lipids were not reported. They postulated that the corticotrophin probably acted by effecting a change in the physical state of the lipid in the serum. The patient in our case showed a general downward trend in the cholesterol, total lipid with an initial fall and then rise of the neutral fat. The phospholipids showed a marked and almost precipitous fall. This steroid effect was exerted while on a low fat diet. During the time on steroids the patient remained completely symptom free and the serum continued to show the same gross degree of turbidity as throughout the entire hospital stay.

SUMMARY

A case of essential hyperlipemia has been presented. Serum lipid studies were correlated with the dietary fat intake.

An abdominal crisis was precipitated on a high fat diet following a steady progressive rise in the serum cholesterol. A high fat diet consisting of sixty per cent unsaturated fatty acids failed to produce an abdominal crisis.

A trial of steroid treatment with a low fat diet produced a general downward trend in the serum lipids with a pronounced fall in the phospholipids.

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SURGICAL TREATMENT OF MALIGNANCIES OF THE EYELIDS

ARMAND D. VERSACI, M.D.

The Author, *Arthur D. Versaci, M.D., of Providence, Rhode Island, Assistant Surgeon, Department of Surgery (Plastic), Rhode Island Hospital.*

DEATHS OCCUR with an ophthalmic malignancy from the metastases, and these deaths are directly due to the method of handling the primary lesion; hence the responsibility for treatment of these cases is a serious one," so wrote Doctor Edmund B. Spaeth.¹ While the majority of malignant tumors of the eyelids are superficially placed basal cell carcinomas, a small percentage are squamous cell carcinomas. When they are diagnosed early and treated adequately, a high rate of cure is possible. Adequate treatment implies complete eradication of the tumor with preservation of lid function. This objective is sometimes difficult to attain, even with small tumors, due to the close proximity of so many vital structures in a confined area. This is especially true in the vicinity of the inner canthus where the duct system courses just beneath the lid margins.

In the majority of cases, the defect created by the surgical removal of an operable malignancy can be corrected through plastic surgery at the time of the original operation. In a smaller number of cases, judgment may dictate the removal of the malignancy without attempt at primary lid reconstruction. In such cases reconstruction may be delayed until complete eradication has been assured.

There is a growing feeling that irradiation therapy should not be used as a common therapeutic modality in eyelid malignancies. The indefiniteness of radiation therapy, coupled with its unselective destruction of adjacent tissues serves to complicate treatment in many instances. Direct complications are obstruction to the lacrimal duct system in inner canthal lesions or corneal injury due to improper shielding of the globe. The most important consideration, however, is the confusing differential diagnosis between recurrent tumor and radiation dermatitis. Its presence poses a dilemma that has many facets. Following apparently successful radiation treatment, the appearance of a roughened or ulcerated area defies accurate diagnosis by any method short of total excision and serial microscopic examination. Recurrent tumor, radiation

dermatitis with or without necrosis, or malignant degeneration as a late radiation effect are all possibilities. Although secondary therapy in such cases is perforce surgical, healing is impaired by the presence of the obvious radiation changes as well as the subtle changes in the periphery of the treated area.

Small skin tumors can be excised and the defect closed directly without jeopardizing lid function. As with all resected specimens, the edges must be examined carefully by a pathologist to be certain of the adequacy of the surgery.

Larger defects may require free skin grafts (figures 1a and 1b). These function very well on the upper lids, but their use on the lower lids is fraught with some danger. The well-known property of free grafts to contract, coupled with the ease of production of ectropion of the lower eyelids, should engender caution in their use. In the absence of frank ectropion, tearing may be a complication when the puncta has been pulled away from contact with the globe, thereby removing the suction effect so necessary to proper drainage.

Other tumors, by virtue of their large size or their position on the lid margins, require that flaps, alone or with grafts, be used to preserve lid function following adequate excisional therapy. It is preferable that adjacent tissue be used in reconstruction since its texture approximates that of the normal lid. When insufficient adjacent tissue is available or conditions of impaired healing are encountered, flaps of indifferent texture must be brought in from distant donor areas. Although these function well after they have been adequately defatted, they are never as pliable nor do they blend as well as the adjacent tissues which have properties similar to the resected tissues.

Surgical defects of the lower lids may be resurfaced by utilizing flaps rotated into the defect from the adjacent cheek. The flaps may be rotated upward from the infraorbital area (figures 2a and 2b) (Imre flap) or may be rotated in from the malar region (figures 3a and 3b). There is available an unlimited amount of tissue that can be rotated especially by the latter method. Great care must be taken when developing the flaps to avoid severing the motor nerve to the orbicularis oculi



Figures 1a, 1b, 2a, 2b, 3a and 3b, left-hand column

1a. Tumor of the inner canthal region and side of nose. 1b. Tumor was excised and the area resurfaced utilizing a free skin graft.

2a. Tumor of lower lid and side of nose. 2b. Tumor excised and the area resurfaced by advancing a flap upward from the infraorbital area.

3a. Tumor of lower eyelid. 3b. Tumor excised and the area resurfaced by rotating a flap in from the malar region.

muscles since the resulting paralysis of the lower lid leaves the globe without adequate protection, disrupts lacrimal drainage, and is very unsightly.

Outer canthal lesions are favorable ones for excision and immediate rotation of adjacent flaps, usually from the upper lid (figures 4a and 4b). Banner-shaped flaps can be outlined and transposed along the lid margin. These are of fine texture and blend in well with the host tissues. Function at the outer canthus is undisturbed by the procedure.

At the inner canthal region, tumors present a much greater surgical challenge. The close proximity of the punctae and lacrimal duct system and the medial canthal ligament, all of which are vitally important to good lid function, pose problems to

Figures 4a, 4b, 5a, 5b, 6a and 6b, right-hand column

4a. Tumor of the lower lid near the outer canthus. 4b. Tumor excised and the area resurfaced by rotating a pedicle flap from the upper eyelid.

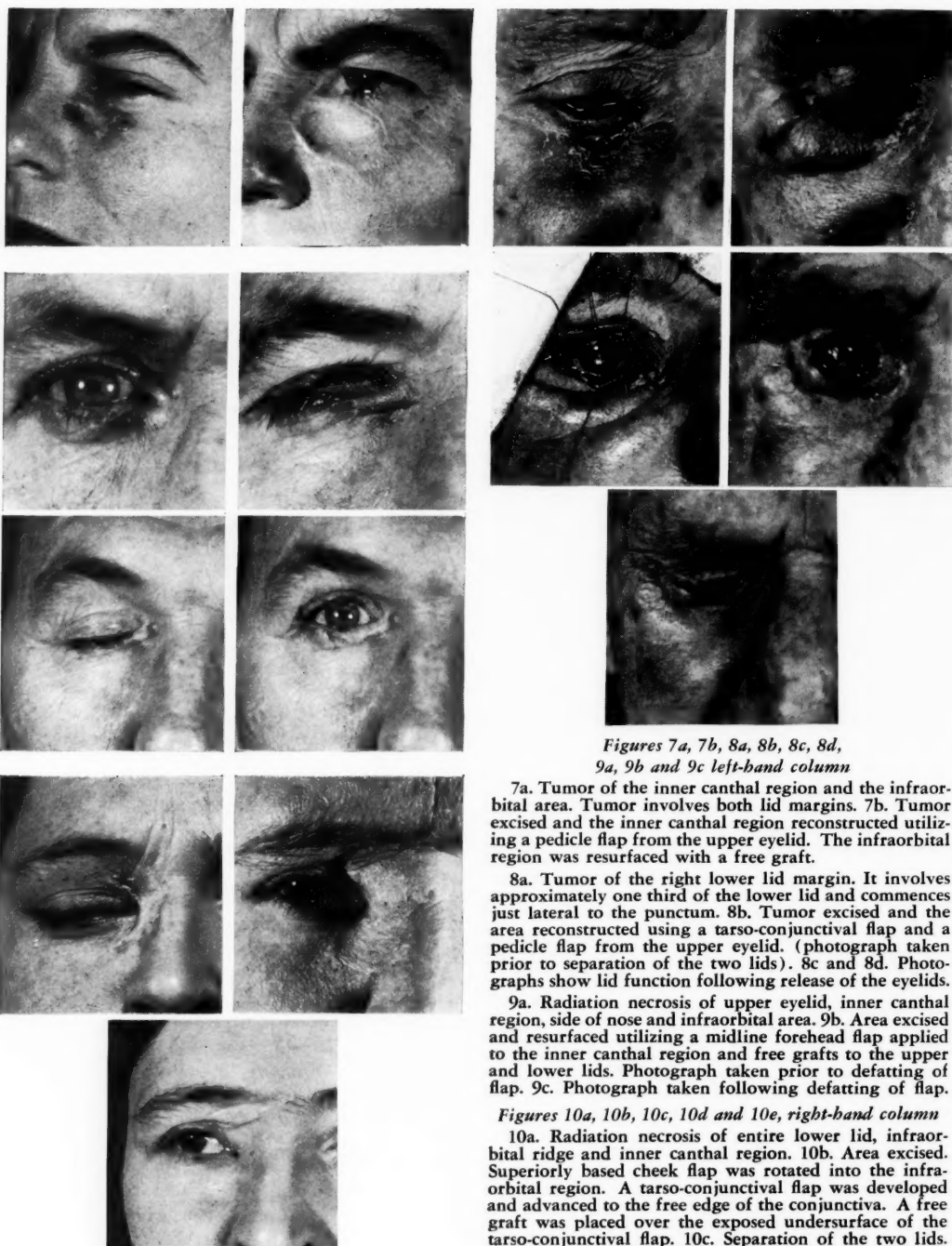
5a. Tumor of the inner canthal region. 5b. Tumor excised and the area resurfaced by rotating a pedicle flap from the upper eyelid.

6a. Tumor of inner canthal region involving the upper and lower lid margins. 6b. Tumor excised and the area reconstructed utilizing a pedicle flap from the upper lid. The flap was folded in such a way as to resurface each lid margin and preserve the sulci.

adequate excisional therapy and reconstruction. Tumors in this area may spread along the duct system to involve the nasal bones and the orbital rim or they may spread to the periorbital tissues.

With the less extensive inner canthal lesions, banner-shaped flaps similar to the type already described are very satisfactory (figures 5a and 5b). In the more extensive lesions where there is involvement of the lid margins, the flap may be folded in such a way as to resurface each lid margin as well as the sulci, thereby preserving the inner canthal fissure (figures 6a and 6b). When the tumor involves the infraorbital area, a graft may be used in conjunction with the banner flap to preserve lid function (figures 7a and 7b).

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Figures 7a, 7b, 8a, 8b, 8c, 8d, 9a, 9b and 9c left-hand column

7a. Tumor of the inner canthal region and the infraorbital area. Tumor involves both lid margins. 7b. Tumor excised and the inner canthal region reconstructed utilizing a pedicle flap from the upper eyelid. The infraorbital region was resurfaced with a free graft.

8a. Tumor of the right lower lid margin. It involves approximately one third of the lower lid and commences just lateral to the punctum. 8b. Tumor excised and the area reconstructed using a tarso-conjunctival flap and a pedicle flap from the upper eyelid. (photograph taken prior to separation of the two lids). 8c and 8d. Photographs show lid function following release of the eyelids.

9a. Radiation necrosis of upper eyelid, inner canthal region, side of nose and infraorbital area. 9b. Area excised and resurfaced utilizing a midline forehead flap applied to the inner canthal region and free grafts to the upper and lower lids. Photograph taken prior to defatting of flap. 9c. Photograph taken following defatting of flap.

Figures 10a, 10b, 10c, 10d and 10e, right-hand column

10a. Radiation necrosis of entire lower lid, infraorbital ridge and inner canthal region. 10b. Area excised. Superiorly based cheek flap was rotated into the infraorbital region. A tarso-conjunctival flap was developed and advanced to the free edge of the conjunctiva. A free graft was placed over the exposed undersurface of the tarso-conjunctival flap. 10c. Separation of the two lids. 10d and 10e. Postoperative photographs showing lid function.

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When a tumor involves the lid margin, the need for conjunctival lining and cartilagenous support of the lid is added to the need for skin coverage (figure 8a). Conjunctiva is available as either a free graft or as a pedicle flap, while the tarsal plate of the uninvolved lid serves as a source for cartilage. A tarso-conjunctival flap can be brought into the defect from the area opposite to the tumor (figure 8b). It may be covered with a skin pedicle and detached after three weeks (figures 8c and 8d). There are many variations of these cross-eyelid flaps, but they all have in common the potential for serving as excellent lid replacements.

Variations of the methods described become necessary when dealing with more extensive tumors or when radiation changes are superimposed on the problem of malignancy. Pedicle tissue frequently has to be introduced from a distant source. The forehead is an excellent source for a flap to resurface the inner canthal region. Such a flap may be used alone or in conjunction with free grafts (figure 9a). Initially it may be unsightly because of its great thickness, but following defatting it will become quite acceptable (figures 9b and 9c). Functionally it is excellent, especially if the tip is forked to surround the inner canthal region and to extend onto each lid. Distance precludes the use of a forehead flap for resurfacing the infraorbital region.

When total lid reconstruction is indicated, conjunctiva, cartilage, and skin must be supplied (figure 10a). A tarso-conjunctival flap may be developed on the opposite lid and then advanced and sutured to the free edge of the conjunctiva at the site of resection. The lid margin is released from the underlying tissues and permitted to drift away from its normal position. A free graft is generally utilized for skin coverage, but a pedicle flap may be used if the defect is not large. In the presence of radiated tissue, it usually becomes necessary to utilize a cheek flap to resurface the infraorbital region when it is involved (figure 10b). The lids are kept fused for approximately one month, after which time they are separated by dividing the lids just beneath the lashes (figure 10c). The skin, tarsal plate, and conjunctiva are divided from canthus to canthus, thereby re-establishing the independency of the two lids (figures 10d and 10e).

SUMMARY

In summary, it is my feeling that the treatment of ophthalmic malignancy is surgical. An attempt has been made to present a representative group of cases to demonstrate the role of reconstructive surgery in the therapy of this disease.

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LICENSURE OF PHYSICAL THERAPISTS

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THE PURPOSE of this paper is to point out the advantages and necessity of a mandatory type law for licensing physical therapists. A law, according to Webster is *The binding custom or practice of a community; the rules of conduct enforced by a controlling authority*. By having a law, we have the authority to command proper performance of practices and forbid improper activities whether these be in medicine or other fields of endeavor. The chief purpose of "a law" is to promote the general good by protecting the individual from other individuals, groups, etc., from malpractice or other activities that are not beneficial to his well-being. The law provides restrictions within which there is a measurable amount of freedom to draft functions, standards and qualifications for practice. Today, in all areas of human endeavor there are restrictions and protective legislation to insure ethical practices, and a minimal level of performance for the welfare of the people. In the legal profession, there are standards of ethical practice governing the qualifications of the man who wishes to practice law. In medicine, we must meet certain standards of education and training to insure a minimal level of knowledge and skill in the care of the patient.

The need for governing legislation exists in the paramedical field of physical therapy as well. As in medicine and other professions, minimal standards of practice are established from the very beginning, at the educational level, by the accreditation of schools.

By the establishment of criteria for acceptability of schools of physical therapy, these criteria endeavor to secure that type of physical therapist, who will function for the safety, general welfare and health of the people through the regulation of the schools that prepare him. The accredited school is a major step toward our objective of providing maximal care and of conforming to ethical practice

standards. However, if these standards of accreditation are not maintained at the practice level and if unqualified people who are graduated from non-accredited schools, are permitted to practice according to their own moral standards without a governing law, various practices will ensue which may not benefit the patient and which may be detrimental to his well-being. This is contrary to our principles of medical practice to provide maximum medical care. If there are minimal standards of education at the academic level there must be minimal standards of education and practice, or laws, within the framework of the state to insure proper and ethical practices.

The physical therapists' activity is auxiliary to other therapeutic measures of a medical and surgical nature. In other words, it is a part of the overall care of our patients. In the use of physical therapy, a prescribed treatment program is requested from a skilled therapist who is directed in his form of treatment with specific instructions as to the type of treatment and the goals to be accomplished. This prescription writing is the same as the procedure used in directing a prescription to a registered pharmacist. In physical disabilities of joints, muscles and nervous system, the use of physical therapeutic measures is designed specifically to accomplish an end and should be utilized to the maximum. Only through the establishment of standards of practice can this be assured. This is one of the objectives of an accredited school of physical therapy, and it should be one of the standards that a state deems necessary that a physical therapist fulfill.

Licensing is a function of the state, and under such a license, a person has the privilege of offering his skills and knowledge to the public where otherwise it would be unlawful to do so. These licenses should be given to applicants who have fulfilled certain requirements. As in the nursing profession, the R.N. indicates a licensed registered nurse, so also the therapist should be licensed in order to indicate to the physician, that he has been trained in the principles of his particular discipline.

Today the term physical therapist has a broad connotation. It may refer to a masseur or to persons only partly or little trained in the use of physical modalities, to aides, students, or physical therapists graduated from non-approved schools, as well

as to the professionally qualified and/or licensed physical therapists. The purpose of professional licensing is to provide society with the benefits that come from the services of a highly skilled group, and on the other hand, to protect society from those who are either unskilled or being highly skilled are nevertheless so unprincipled as to misuse their knowledge to the disadvantage of the public.

Licensing of any kind is provided primarily to protect the public and assures this protection as completely as possible. Legal control would insure education in institutions that meet minimum requirements for accreditation; also certain minimum skills would be assured before a physical therapist could pass beyond the portals of the accredited school.

There will be some who will complain that there are so few physical therapists available that a licensing law would make the supply of physical therapists much smaller. This reasoning is harmful to institutions offering such services since a certain amount of legal responsibility falls upon the institution itself when bodily injury is incurred. Because the state of Rhode Island is the only state in New England not requiring licensure, there is a constant influx of unqualified personnel into our state who set themselves up as physical therapists so that our available people are somewhat higher than in other states. Nevertheless, these organizations leave themselves liable to suit because they do not have people who are responsible and who have met certain minimum standards of training. By licensure we would be insured of only qualified people.

Negligence is a common cause term in legal cases of malpractice. In the case of a department running with unqualified personnel, negligence, combined with inadequately trained people, is a much larger word and in fact, it is underlined in red, and leaves an institution more prone to legal suit. Lack of training or experience does not excuse one from an act of negligence in a suit of malpractice. By licensure, a positive step to minimize this fault as much as is humanly possible is attempted. A certain degree of care is necessary in the application of physical therapeutic measures and failure to exercise such care is no sound reason for depriving a patient of the benefits that may be derived from the proper application of these modalities. Therefore, by licensing we would minimize the negligence that would result from lack of experience and knowledge in the use of the modalities peculiar to this field.

In discussing the need for licensure, the question arises where does the practice of physical therapy end and the practice of medicine begin. Members of the APTA are bound by its code of ethics which states that the physical therapist should carry on

the techniques of the profession only under specific medical direction; that the diagnosis of the patient's condition and the prescription of physical therapy are the responsibility of the physician; that in no instance shall a physical therapist assume the responsibility of prescribing treatment; that before treating a patient, the physical therapist shall obtain from the physician, clear and adequate information regarding diagnosis, instructions for treatment and if possible, re-examination dates; and finally that the physical therapists shall comply with the doctor's directions. As the practice of physical therapy has developed, certain procedures have become accepted functions of the physical therapist. To circumvent malpractice from the physical therapy standpoint, these therapeutic procedures should be undertaken under the supervision of duly licensed physicians or under such physician's written prescription. Thus, licensing protects the physical therapist who treats only under written prescription; and by the same token, protects the physician who is responsible for the patient's care by assuring him that the licensed person to whom he directs his prescription can follow its directions. Physical therapy is prescribed only after the patient has been duly examined and the feasibility of physical treatment decided. Thereafter, physical therapy is prescribed and in areas where qualified people are practicing, the proper procedures will be undertaken that are within the scope of the therapist's abilities.

Under the law, the physical therapist is primarily responsible for any injury or bodily harm resulting from his application of physical therapy. The next question is, "Can anyone else be held responsible for improper practices?" Here the master-servant rule is involved. The employer is also liable for any injury or harm that occurs in pursuing an authorized procedure incorrectly. This covers many negligence cases. If the employer engages a physical therapist it is his responsibility if he has chosen an unqualified or an ineffective, careless or unreliable employee. With licensure, an employer can be at least assured of the minimum standards of eligibility for licensure as regards education, training and experience.

In New England, Rhode Island is the only state without a registry law to restrict the practice of physical therapy to those qualified and from an accredited school. As a consequence, there is an influx of unqualified personnel into our state. In addition, there are many unqualified physical therapists who enter the state and set up private practices. They follow the old method of treating the patient with heat and massage without medical prescription or supervision. With our broadening horizon of therapeutics, it no longer suffices or is beneficial to the patient to allow the family to call

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Editorials

THE INTERN SHORTAGE

A RECENT PRESS RELEASE pointed out that only one hospital in Rhode Island received its full quota of interns for the ensuing year through the national intern matching program. Rhode Island Hospital is to be congratulated on procuring its total allotment of eighteen men. Many university-affiliated institutions have not done as well. Not a single vacancy, however, was filled through this program in any of the remaining five hospitals, having a total of forty-two vacancies. This is not to be construed as a measure of the lack of intern service in these other institutions. They have been successful in varying degrees and in proportion to their devotion to medical education in obtaining as interns graduates of foreign medical schools. Some, perhaps many, of the men now serving are of a caliber quite equal to that of graduates of American medical schools, and they are almost uniformly eager to learn and to be indoctrinated in modern American medical practice.

Yet neither the recent success of Rhode Island Hospital in this matter, nor the qualified success of other local hospitals in meeting the problem of intern services in other ways, is an indication of the magnitude of the problem now upon us or to be faced in the foreseeable future.

In the country at large only some fifty-four per cent of the available 12,000 accredited internships were filled for the coming year by candidates procured through the intern matching program. A few more may well have been filled by American graduates outside the plan. There are always a few men who, for example, fail to be matched through some tactical error in planning. But this leaves in excess of 5,000 vacancies to be filled by other means. Foreign graduates of foreign schools have, since World War II, been an important source of manpower in this critical situation. American hospitals have reciprocated in varying degree in providing these men with educational opportunities. As a result of the competitive situation and in response to the need for meeting accreditation standards, the educational programs have been progressively improved. This is generally evident in all of the local hospitals concerned. In each of the six Rhode Island hospitals in the matching program, for exam-

ple, there is a full- or part-time director of medical education and a formally organized educational program. In some instances these programs are of superior quality.

Yet the impending impact of the examinations conducted by the Educational Council for Foreign Medical Graduates and the certification attendant thereon has worried greatly those hospitals that have been dependent upon such graduates. The July 1, 1960 deadline for such certification, even with its various escape clauses, is a most serious matter, particularly for those institutions whose success in the past has been marginal.

In a recent address in Providence, Mr. John Fogarty, Congressman from Rhode Island, whose interest in these matters has been genuine and consistent, stated that one answer to the problem is his plan for the Federal government to underwrite the establishment of twenty-two more medical schools, including, as he again emphasized, one in Rhode Island. Increased enrollment in the existing schools would also be encouraged through subsidies and scholarships. Allowing for an average of 100 graduates per new school, a round total of 2,000 additional graduates could be expected from this source, and perhaps another 1,000 from already existing schools. These additional graduates would cut the deficit by some 3,000. He further indicated, however, that the expected deficit in 1970, according to the Bayne-Jones report based on the expected increase in population and bed capacity, would be, not 5,000, but 7,000.

This discouraging prospect makes it imperative that we seek additional means of solving the problem of intern shortage. If we add together all potential resources of American and foreign medical educational institutions, the deficit in interns will still be of major magnitude. In answer to a question regarding this aspect of the problem, Mr. Fogarty stated that perhaps research in hospital administrative practices may suggest an answer. We might add that the large numbers of interns soaked up by the university teaching centers is another area urgently requiring critical inspection. In the meantime, however, the outlook is bleak indeed.

IT'S ANNUAL MEETING TIME

Physicians undoubtedly attend more meetings than any other group of citizens. And rightly so, for medicine is not an exact science, and therefore its demands are never ending upon one who would keep abreast of what is new, tested and proved in the field of the healing arts.

The annual meeting of the state medical society rarely produces any unusual or eye-catching press notices, but for the physician it provides lectures on important phases of medical practice that can aid him in his daily tasks.

For the busy doctor the state medical society's annual meeting is also a time saver. No long trips away from home are involved. On the contrary, the program brings outstanding physicians to Providence, less than an hour's distance from the farthest parts of our state, and the local physician can adjust his daily schedule to allow of his attending the scientific lectures that appeal most to him.

The cost involved in staging the annual meeting is far greater than the average physician realizes. In return, therefore, he owes it to himself, his patients and his colleagues to give to the meeting the complete support that it warrants.

The dates when *YOU* are expected at the Medical Library are: *TUESDAY* evening, May 10th, and Wednesday, May 11th from 11:00 A.M. to 5:00 P.M.

GOBBLEDYGOOK AND THE "OLOGIES"

A wise old New Englander, himself a master of clear and convincing expression, once said to his teenage grandson, "Never use a fifty-cent word when a ten-center will do."

In this connection a story that is probably entirely without foundation has it that once the late President Eliot of Harvard ran aground on a reef while canoeing and shouted to friends on the shore, "I was aware of the proximity of the rock but had miscalculated the force of the tide." Another more striking example is the absurd remark of the little girl who was told to keep her baby brother away from the water. Innocently aping the conversation she was used to hearing on the part of her father she cried, "Oh! Daddy, Daddy, come quick, Johnnie is adjacent to the periphery of the mill pond."

At a hospital recently a visitor who had come to study staff activities asked the Administrator, "Do you think the members of your staff will be upset if you apply the penalties listed in your rules?" This was the answer, "The implementation of sanctions will inevitably eventuate in subsequent repercussions." In other words, "Yes."

Such language is silly in conversation and why must we use it in scientific articles except when it is needed to express an exact meaning that cannot be stated in simpler terms? Why must we use a

style that is stilted and often even obscure to the casual reader?

In a leading article recently published in a venerable medical journal, a paragraph begins, "Phenomenologically the — syndrome is," etc. Phenomenologically! What a word! On the basis of what we have been saying it rates at least a value of a dollar and fifteen cents. And there are many "ologies" in more common use than is phenomenology (described as the science concerned with the study of phenomena) than which nothing could be more general, one would suppose. Consider this question on an examination paper, "Describe the methodology used in studying the symptomatology and the pathology in the affected tissues." What the professor meant was, "Describe the methods used in studying the symptoms and the lesions in the affected tissues."

Usage, it is said, makes language and, sad to say, it may be that in time the "ologies" used as described may be considered correct. At present, at least, methodology means the science and study of methods, and symptomatology the science and study of symptoms. In the same way pathology is a science, not a condition, as we all know. We can confirm these facts by consulting our dictionaries. Should we go out of our way to add new and strange meanings to words in an abortive attempt to make our language sound impressive and technical? Should we not rather make it a rule to say in as simple and straight-forward a manner as possible exactly what we mean — deploring contemporaneous manifestations of sesquipedalianism?

"A physician cannot, if he values this nation's high standard of medical care, divert his gaze from the social, economic and political issues which affect the practice of medicine."

"If governments are good, men and women have made them so. If governments are bad, men and women have allowed them to become so."

"Politics is not an activity that should be entrusted to the venal or the second rate. Nor is the word 'politician' a term of opprobrium."

"Therefore, I think we have a double duty — as physicians and as citizens — to take an even more active part in the political and civic life of our nation, state and community."

... LOUIS M. ORR, M.D., President of the American Medical Association in an address at Dallas, December 1, 1959

RHODE ISLAND MEDICAL SOCIETY ANNUAL MEETING

**TUESDAY, MAY 10 and WEDNESDAY,
MAY 11**

LICENSURE OF PHYSICAL THERAPISTS

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in someone Mrs. Jones had in for a massage when she had her stroke. Today, the use of physical modalities and therapeutic exercises has a definite place in the armamentarium of medication. Therefore, it is important that these physical therapeutic measures be regulated by medical prescription and medical supervision.

In considering legislation for the registering of physical therapists, there are two types of law: the permissive law and the mandatory law. Under the permissive law a physical therapist qualified or unqualified can enter the state and practice without medical prescription and without direction or supervision by a physician. This is contrary to the best practice in medicine and contrary to our responsibility to our patient. The mandatory law, however, allows that patients be treated only under the direct supervision of a physician and thus conforms to the APTA code of ethics. In this way, our physical therapists are qualified, and protected, and since they are liable for the proper care of their patients, they are in turn protected in cases of liability. It is of the utmost importance that these therapists know what they are treating, and it is only the diagnosis and prescription of the physician which will guide our qualified people in the proper treatment of the patient. No bill should prohibit any person from making use of such treatment as heat, massage and whirlpool baths if he is qualified and fully trained in their use, provided he does not represent himself as a physical therapist if he is not duly qualified and licensed as such.

A proposed bill should include a grandfather clause, and no person should be legislated out of his livelihood. A bill should not effect those already in the state and practicing since at the onset there will be a number of people who must be protected. However, under the mandatory law or bill, people with limited qualifications should be allowed to maintain their practices only within the scope of their qualifications and not as fully qualified and licensed therapists.

Through the objectives and functions set down in the code of ethics of the APTA, this organization has fostered and encouraged enactment of legislation and/or licensure laws in various states. There are now thirty-two such laws. To meet the physical therapy needs of the people and to safeguard the welfare of the public, a mandatory licensure law is necessary. In states where physical therapy is not regulated by mandatory laws, there are unknown numbers of pseudo-physical therapists, graduates of unapproved schools, or those who have no formal training, who practice physical therapy without prescription and direction from a physician, and who are not bound by a code of ethics but merely

RHODE ISLAND MEDICAL JOURNAL

by their individual moral code. These independent practitioners are large in number, and due to the fact that the name and value of physical therapy is now becoming known, this number is ever increasing and will continue to do so. A review in 1957 of the content and administration of existing physical therapy practice acts revealed that there has been a trend toward stronger legislation. From 1913 to 1952 there were eleven permissive laws and four mandatory laws in effect; in the period from 1953 to 1958, five permissive laws and eleven mandatory laws were enacted. That a permissive law does not effectively protect the public becomes evident by inspection of the telephone directories in the major cities and states where such laws have been enacted. Health studios, massage parlors, unqualified practitioners, at times far outnumber those who are listed with qualifications. Through mandatory legislation that requires physical therapists to practice under prescription, and only by this means, can the practitioner of physical therapy be inseparably connected with the physician. Members of the APTA are bound by a code of ethics. This code should be in force on a state level as well. All of these principles set up in the APTA can be enforced and can be used to elevate the standards of this state by mandatory legislation to protect those who are ethically and professionally qualified to practice. Voluntary registration with the APTA which includes graduation from an accredited school, has no legal status in the various states, and therefore the unqualified and unethical physical therapist may function with equal privileges and status, and may continue this practice unless he is subject to action by the state under an enforcement law. The primary purpose of governmental licensure and/or registration is to protect the public. While such legislation has a concomitant effect of legal recognition of the physical therapy profession, we believe that such legislation is in the best interest of all physicians, all hospitals and treatment centers.

By-products of the mandatory law would necessarily follow:

1. The patients will find it necessary to seek the advice of a physician and are protected from "the man down the street." Thus the patient is protected and is treated only for his existing illness.

2. Physicians and hospitals are assured that those who are licensed to practice have met the minimum requirements of training and experience held by the state to be necessary. Because physical therapy is a relatively new adjunct to patient care, not all physicians and hospital administrators are fully aware of the necessary educational qualifications of physical therapists. By licensure minimal standards of education, training and experience are assured and will serve as a safeguard for those who

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*Peterman, R. A.: Clinical report cited with permission.



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LICENSURE OF PHYSICAL THERAPISTS

concluded from page 258

must engage such services.

3. A physician may still employ his own agent who works under his supervision and treats only patients under his care.

4. A hospital may still employ aides or nonprofessional assistants to support or assist the work of a licensed physical therapist.

Present administrative regulations in Rhode Island specify that any person who can pass the examination for a physical therapist is permitted to enter employment in those facilities that hire only therapists who qualified under the examination. This specific type of regulation is contrary to the best interests of the physical treatment of the ill and disabled patient and certainly requires revision.

The United States Department of Labor in its *Occupational Outlook Handbook of 1959* outlines the qualifications and training of the physical therapist. Admission to an approved school to receive a certificate course generally includes a baccalaureate degree and prior studies specifically in biology, physical and social science; and the physical therapist's work is described as providing physical exercise, mechanical apparatus and application of massage, heat, light, water or electricity to treat disorders of muscle, nerve, joint or bone disease. They also perform muscle and nerve tests and obtain information necessary for further diagnosis and further treatment. They also instruct patients in care and use of braces, crutches and artificial limbs. Our present licensing law in Rhode Island is certainly inadequate for the protection of this group, and revision of the law at the state level certainly is warranted. An essential qualification for licensing should include an accredited course emphasizing therapeutic exercise, its physiologic application as well as its hazards in various diseases. To accept people, who have an understanding of the use of lamps and whirlpool or bodily manipulation, as physical therapists, is to deprive us of the full advantages derived from the proper use of physical therapy in its true connotation.

Physical therapy has a definite place in the armamentarium of medical therapeutics. To delegate such therapeutics to non-trained or unqualified people is contrary to the best interests of our patients. We are morally bound to protect this group of paramedical specialists, and by the same token to insure that this sphere of patient care will be carried out to its fullest extent with the safeguard and welfare of the patient uppermost as the objective as stated in the APTA code of ethics.

PATRONIZE JOURNAL ADVERTISERS

RHODE ISLAND MEDICAL JOURNAL DISTRICT MEDICAL SOCIETY MEETING

PAWTUCKET MEDICAL ASSOCIATION

The annual meeting of the Pawtucket Medical Association was held on March 17, 1960 at the Memorial Hospital. The meeting was called to order by Doctor Rudolph Jaworski.

The minutes of the previous meeting and the minutes of the previous annual meeting were read and accepted. The treasurer's report was read and accepted.

In his annual address Doctor Jaworski reviewed the year, mentioning that the highlights of the year were the stand that the Pawtucket Medical Association took against Group Insurance and the informal discussions concerning the Social Security program. The Economic Committee, which has investigated various types of insurance, was commended for its efforts. Doctor Jaworski expressed the opinion that greater efforts were in order by the membership to honor deceased members, especially those who have not been active in the Society in their later years. He also expressed the hope that in the future the Society would remain alert to activities in the medico-social and medico-economic areas, and that steps could be taken to anticipate and to prevent problems from arising in these fields.

The report of the Nominating Committee was submitted and the following slate of officers was elected for the coming year:

PresidentEUGENE GAUDET, M.D.
Vice PresidentJOHN F. HOGAN, M.D.
SecretaryEDMUND BILLINGS, M.D.
TreasurerROCCO BRUNO, M.D.
Delegates to the Rhode Island Medical Society:
Earl Kelly, M.D., Robert Hayes, M.D., Harry Hecker, M.D., Alexander Jaworski, M.D., and Bencel Schiff, M.D.

Councillor: Henry Hanley, M.D.

Alternate: John Gordon, M.D.

Doctor Gaudet was escorted to the chair by Doctors William Pinault and Edward Trainor. He expressed his thanks to the membership for his election and stated that he would make appointments to the various committees at a future date.

The meeting was adjourned at 12:00 noon.

Respectfully submitted,

JOHN J. CUNNINGHAM, M.D., *Secretary*

ANNUAL DINNER . . . GOLF TOURNAMENT

Providence Medical Association

At Newport, Wednesday, September 14



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THROUGH .

*the Microscope*

Amherst College Selects Physician as President

For the second time within a decade and a half a Columbia University professor will relinquish his teaching duties in New York to become president of Amherst College in Massachusetts.

Doctor Calvin Hastings Plimpton, associate professor of clinical medicine at Columbia, will succeed President Charles W. Cole, who is retiring from Amherst in June to join the Rockefeller Foundation.

Thus Doctor Plimpton adds to a long-standing Columbia tradition of training for university leadership.

It was in 1946 that Doctor Cole left his post as professor of history at Columbia to become twelfth president of Amherst.

The 139-year-old New England institution's 13th president, like Doctor Cole, is also a Columbia alumnus. The University awarded Doctor Plimpton a Doctor of Medical Science degree in 1951. Doctor Cole holds two Columbia degrees—a Master's degree in 1928, and a Ph.D. in 1931. Both received their undergraduate degrees at Amherst.

Doctor Plimpton, who joined the faculty of Columbia's College of Physicians and Surgeons in 1949, also serves as assistant dean of the medical school. He is also assistant attending physician at Presbyterian Hospital in the Columbia-Presbyterian Medical Center. He has served on admissions committee of the College of Physicians and Surgeons since 1950.

Asked about how a physician feels about heading a liberal arts college, Doctor Plimpton said he is "idealistic" enough to hope that a "good doctor is a liberal fellow, and is interested in education as much as anybody else."

Medical Costs Lag in 20-Year Price Study

Despite the rapid increase in medical care costs in recent years, this expense has not risen as much as several other items since pre-World War II days, the Health Insurance Institute reported recently.

During the 20-year period from 1938 to 1958, the cost of food and apparel both increased at a faster pace than medical care, the Institute said in its report based on official figures of the Bureau of Labor Statistics' Consumer Price Index.

In addition, the all-items index also has climbed more sharply than the medical care index, said the Institute.

From 1938 to 1958, the all-items index rose 105 per cent, while medical care went up 99 per cent, apparel increased 100 per cent, and food soared 149 per cent.

In that same period, the cost of transportation climbed 95 per cent, but in the 1936-56 period even transportation rose faster than medical care, said the Institute.

One of the reasons for the more rapid climb in cost of medical services in recent years was stated in the Department of Labor's Monthly Labor Review.

"From 1936 to 1946," said the publication, "consumer prices of commodities rose 52 per cent; of services, characteristically slow in responding to general economic developments, only half as much. From 1946 to 1956, however, commodity prices went up by another 37 per cent while service prices rushed ahead, gaining 50 per cent."

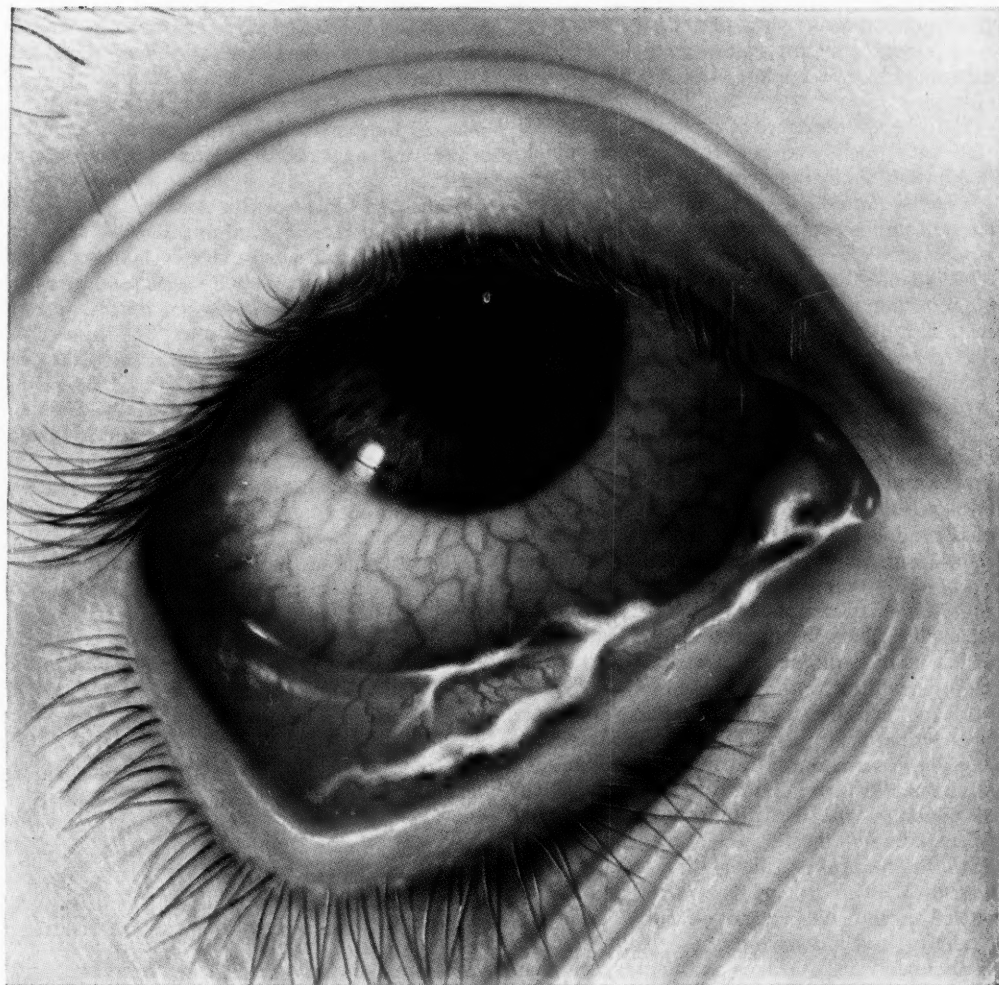
From the base period of 1947-49 to 1958, the rise in the cost of medical care, 44 per cent, was greater than the increase of any other kind of personal expense.

In this same 1948-58 decade, the number of Americans covered by health insurance doubled, while benefits paid through health insurance increased five times, said the Institute.

Occupational Illnesses Increases With New Diseases

Occupational illnesses, which presently number about 3,000 in this country, are increasing at the rate of approximately 200 new disease entities a year, according to a recent issue of *Patterns of Disease*, a Parke, Davis & Company publication prepared for the medical profession.

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1. Lippmann, O.: Arch. Ophth. 57:339, March 1957.
2. Gordon, D.M.: Am. J. Ophth. 46:740, November 1958.

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THROUGH THE MICROSCOPE

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The publication reports that occupational illnesses now account for an estimated 10% of the total annual U. S. wage loss of \$4,200,000,000 due to illness.

The increased incidence of occupational diseases is attributed mainly to new chemical compounds being introduced by industry at the rate of 1 every 24 minutes, *Patterns* asserts. "Of these, a significant number possess properties potentially harmful to workmen."

One possible danger in this constantly increasing production is the risk of exposing workmen to new and unknown carcinogens, the publication says. It warns that "new products and methods of production should be carefully studied in order to guard workers against such harmful exposure."

Health hazards in industry range from fiber glass to actinic rays, according to *Patterns*. In one study of more than 300,000 civil service personnel, 18% of injuries and medical conditions were of occupational origin. Physical agents (e.g. actinic rays, heat, cold, pressure) produced the highest incidence rate of these occupational conditions, accounting for 42%; skin irritants (e.g. oils, greases, acids and alkalis, fiber glass) ranked second, with 35%; and inhalation hazards (e.g. mists and fumes, dusts, gases) were third, with 20%.

Commonest industrial health problem is occupational dermatitis, *Patterns* reports, and about 90% of dermatoses are caused by contact with chemicals. In the manufacturing industries, slightly less than half of occupational dermatitis cases are attributed to petroleum products.

Still the No. 1 occupational disease in the U. S. in terms of disability and compensation costs, despite advances in dust control measures, is silicosis, *Patterns* says. Silicosis claims, for example, which represent only 3% of claims, account for more than one quarter of all compensation awarded in occupational disease cases by the New York State Workmen's Compensation Board.

Fifty-Year Club of Doctors Forming

Doctor J. H. McCurry, of Cash, Ark. advises that he has the approval of the American Medical Association to organize a Fifty Year Club within the A.M.A. Dr. McCurry is anxious to hear from physicians who have been in practice fifty years or more who desire to become members of this club, giving their name and a complete address.

The first meeting is to be held in Washington, D. C. at the Clinical meeting November 29 to December 2, 1960.

More Spent on Recreation Than Medical Care

Americans are spending twice as much money for recreation, alcoholic beverages and tobacco as they are for medical care, the Health Insurance

RHODE ISLAND MEDICAL JOURNAL

Institute reports. Two out of every 18 dollars the public spends for its personal needs goes for recreation, alcohol or tobacco compared to an expenditure for medical care of one out of every 18 dollars, said the Institute.

According to data based on 1958 figures and released by the U. S. Department of Commerce, Americans spent \$293 billion on their personal needs.

Some \$17 billion of this sum, or 5.8 per cent, was spent for recreation while \$9.2 billion (3.1 per cent) went for alcohol and \$6.3 billion (2.1 per cent) was used to purchase tobacco products, for a total of \$32.5 billion, or 11 per cent of total personal consumption expenditures.

In comparison, \$16.4 billion (5.6 per cent) was spent on medical care, stated the Institute. Other public expenditures in 1958 included \$67 billion for food, \$38 billion for housing, nearly \$34 billion for transportation, \$32 billion for clothing, accessories and jewelry, almost \$4 billion for religious and welfare activities, and \$3.4 billion for education and research.

The distribution of each dollar spent for medical care changed sharply in the period from 1938 to 1958, said the Institute.

In 1958, physicians and dentists received a smaller share of the medical care dollar than they did in 1938, while hospitals, medicines and appliances received a larger share.

Doctors Drop

From each dollar of the \$2.7 billion spent for medical care in 1938, physicians received 30 cents, but by 1958 doctors were getting 26 cents out of each dollar.

An even sharper drop in distribution of the medical care dollar was experienced by dentists, whose share of 15 cents on the dollar was reduced to 10 cents.

The slack was taken up by hospitals, medicines and appliances, declared the Institute. Twenty-two cents out of every medical care dollar spent in 1938 was for hospital services, but by 1958, this slice of the dollar was up to 31 cents. Hospitals attribute this rise to the expansion of hospital services and their greater utilization which has increased the number and variety of skilled personnel required.

The rise was less dramatic in medicines and appliances, which climbed from 26 cents to 27 cents.

The amount spent for all other medical needs, which include other professional services and nursing home care, dropped from seven cents to six cents.

Improvement of Medical Management of Surgical Patient Sought

A grant of \$146,275 by The John A. Hartford Foundation, Inc., of New York, to the American

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THROUGH THE MICROSCOPE

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College of Surgeons to inaugurate a program for improving the medical management of the surgical and injured patient was announced recently.

The new program will permit immediate establishment of pilot projects in selected cities, employment of a field staff to provide personal guidance—both to the public and to the profession—throughout America, and initiation of an evaluation program, all with the primary goal of improving care of the surgical and injured patient. It is expected that the College's current efforts in this field will also be implemented by the grant, particularly in the following problem-area programs: effective safe transportation of the injured, first aid and self-aid, organization and staffing of the several elements of hospitals involved in the emergency medical care of the injured, demands caused by disasters and education of the medical profession in the management of trauma at the undergraduate and graduate levels.

American Philanthropy Still Exists in Large Measure

American philanthropy totaled \$7.8 billion in 1959, \$700 million more than 1958, it is revealed in *GIVING, USA*, a publication of The American Association of Fund-Raising Counsel, Inc.

The AAFRC is a nonprofit organization of 31 professional firms specializing in directing and counseling fund-raising programs in the United States and Canada.

Religion, by far the largest recipient of American giving, received about half of all philanthropy, while education received approximately 15 per cent, and health 14 per cent in 1959.

According to the Association, individuals contributed an estimated \$6.1 billion or approximately 78 per cent of all philanthropy while corporations accounted for \$526 million—a slight increase over 1958, and foundations made grants of \$700 million, an increase of 36 per cent over the \$505 million given in 1958. Charitable bequests totaled \$510 million—also an increase. The Association also noted that one in four of the population, or 45 million Americans, volunteered time and talent to one or more causes in 1959—an increase of 4 million.

The nation spent \$22.7 million for health in 1959, or nearly 5.2 per cent of the gross national product.

Total giving for health in 1959 exceeded \$1 billion. In 1940, it was \$71 million.

Demand for additional facilities far outstripped capability in 1959. The needs of the nation for new hospital beds are estimated at 880,000 in addition to 323,000 more needed in nursing homes. One new bed is needed every 18 hours merely to keep pace

with population growth. This translates itself into \$500 million needed annually for several years to come. An estimated \$300 million annually may have to come from private contributions.

Mortality Data for 1958 Issued

Heart disease, cancer, strokes and accidents accounted for 71 per cent of all deaths in 1958, according to final data on 1958 mortality released recently by the Public Health Service's National Office of Vital Statistics.

The 1,647,886 deaths that occurred in 1958 gave the nation a death rate of 9.5 per 1,000 population, compared to a rate of 9.6 in 1957. The number and the rates per 100,000 population for each of the four leading causes of death in 1958 follow:

	<i>Number</i>	<i>Rate</i>
Heart disease	637,246	367.9
Malignant neoplasms, or cancer	254,426	146.9
Vascular lesions (chiefly strokes)	190,758	110.1
Accidents, all forms	90,604	52.3
Motor-vehicle accidents	36,981	21.3
All other accidents	53,623	31.0

The death rates for heart disease and cancer in 1958, 367.9 and 146.9 respectively, were slightly lower than the comparable rates in 1957, 369.6 and 148.7. The rate for vascular lesions remained about the same. The death rate for accidents, 52.3, was almost 7 per cent lower than the rate of 56.0 in 1957, with the percentage decrease being slightly lower for motor vehicle accidents than for all other forms of accidents.

Chiefly as a result of the influenza epidemic of 1957-58, the toll of deaths from influenza and pneumonia remained high in 1958—57,439 deaths, or a death rate of 33.2 per 100,000 population. The death rate for these conditions in 1958, the second highest in 10 years, was more than 7 per cent lower than the rate of 35.8 recorded in 1957.

Services Account for Health Cost Rises

The typical American family now spends about \$294 annually for personal health services, or 42 per cent more than it did five years ago, Health Information Foundation reports. The Foundation said this is due mostly to increased use of services, with rising costs as a second important factor.

In its monthly statistical bulletin, *Progress in Health Services*, the Foundation published preliminary results of a study made in cooperation with the National Opinion Research Center of the University of Chicago. A representative cross-section of American families was interviewed at length about what kinds of services they used in a 12-month period during 1957-58 and how they paid for these services.

According to the Foundation, the average family's total expenditures for health were 42 per cent higher during the 1957-58 period than during a comparable survey made five years earlier. Less

continued on next page

than half of the increase was due to increased costs of health care, while somewhat more than half was due to increased use of services. "Use," as estimated by the Foundation, was taken to be the equivalent of increased expenditures in constant dollars, with prices adjusted according to the U. S. Department of Labor's Consumer Price Index.

"An increase in use," the Foundation added, "may not necessarily mean an increase in quantity . . . It may mean a more expensive type of service . . . e.g., consultation with a specialist, a private room in a hospital, or a more complex form of medication.

The two groups at either end of the age scale—children under six and persons 65 and over—increased their "use" of medical services by about 45 per cent during the five-year period.

"Increases in these groups are particularly gratifying," said George Bugbee, Foundation President, "—at younger ages because early treatment is likely to ward off more serious trouble in later life, at the older ages because there has been so much discussion recently as to whether people 65 and over utilize services at an adequate rate."

Among other survey findings described by the Foundation:

The largest single component of spending for health in 1957-58 was for services of physicians (34 per cent of the overall health dollar). Then came hospitals, 23 per cent; drugs and medications, 20 per cent; dental services, 15 per cent; and other medical goods and services (eyeglasses, special-duty nursing, etc.), 8 per cent.

A.M.A. Establishes Scholarship Program

The American Medical Association has initiated action on the establishment of a scholarship program for medical students with the appointment of a special study committee.

William F. Norwood, Ph.D., chairman of the division of legal and cultural medicine, College of Medical Evangelists, Los Angeles, has been named staff director of the committee.

The House of Delegates, policy-making body of the A.M.A., in December adopted a resolution that a scholarship fund should be established to aid deserving students to enter the field of medicine and that such a fund be backed by the A.M.A. as a primary sponsor. It acted on the recommendation of the A.M.A. Council on Medical Education and Hospitals which reported it had found sufficient evidence of a real need for a scholarship program.

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Specifically, the committee is empowered to:

Present a scholarship program, its development, administration, and the role of the American Medical Association in fulfilling it.

Ascertain the maximum to which medical schools could expand their student bodies while maintaining the quality of medical education.

Ascertain what universities can support new medical schools with qualified students and sufficient clinical material for teaching—either on a two-year or a full four-year basis.

Investigate the securing of competent medical faculties.

Investigate financing of expansion and establishment of medical schools.

Investigate financing of medical education as to the most economical methods of obtaining high quality medical training.

Develop methods of getting well-qualified students to undertake the study of medicine.

Investigate the possibility of relaxing rigid geographic restrictions on the admission of students to medical schools.

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nounced that it will attempt a new development in medical publishing. An editorial advisory board of some 150 members will supervise the publication of a recorded medical journal under the title "Voice of Medicine." To be published will be recordings of discussions and interviews taken during national and international medical congresses, clinical-pathological conferences, world health assemblies, medical meetings and symposia.

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STANDING ORDERS FOR NURSES IN CONVALESCENT HOMES GUIDE FOR MEDICAL CARE IN NURSING HOMES AND RELATED FACILITIES*

Appendices to the report of the Committee on Social Welfare adopted by the
House of Delegates of the Rhode Island Medical Society, January 27, 1960

*Concluded from page 204,
RHODE ISLAND MEDICAL JOURNAL, MARCH, 1960.

Appendix A *Standing Orders for Nurses in Nursing and Convalescent Homes*

For some time the medical and nursing professions have been concerned about the employment of nurses in nursing homes, convalescent homes, etc., and their adequate medical supervision.

General Relationships

Standing orders represent a preliminary understanding between physician and assisting personnel about routine conduct of a medical service. In establishing such orders in a nursing home, several considerations need to be borne in mind:

1. The greater the amount of personal supervision exercised by the physician directly with his patient, the better is the nursing health service.
2. Standing orders cannot be written to meet every situation likely to arise. They must be modified to meet specific requirements and in accordance with the training and professional competence of the assisting personnel. They should be signed by the supervising medical authority and posted prominently in the medical department.
3. The nurse in the home should assume no responsibility for service outside the field of her professional training. This applies particularly to individual case management, from which the nurse should rigidly abstain except:
 - (a) In emergencies demanding immediate independent judgment and action.

Emergency Procedure in Nursing Homes, etc.

General principles which operate in all emergency situations apply to nursing homes as well. They are:

1. Call a physician immediately.
2. Stop bleeding.
3. Restore breathing.
4. Prevent shock and infection.
5. Do no more than is actually needed.

The supervising physician should assure himself that these instructions are thoroughly understood and should institute special training when necessary. Nurses should qualify as first aid instructor.

Emergency Supplies. An emergency pack with essential sterile supplies should be available at all times in the medical department. Regular inspection is necessary.

Hemorrhage. Bleeding calls for immediate attention. The nurse should notify the physician and, until he arrives, proceed as follows:

1. Expose the wound.
2. Remove obvious foreign matter.
3. Apply pressure.

Direct manual or bandage pressure firmly applied over sterile gauze packing at the bleeding site will effectively control moderate hemorrhage. Indirect compression is indicated in excessive bleeding not controllable by direct methods. Digital compression over the vessel against underlying structures either adjacent to the wound or at the nearest pressure point will usually suffice until the physician arrives. Indirect pressure should be applied proximal or distal to the wound, in keeping with the arterial or venous character of the bleeding. Hemostats or clamps should be applied whenever the emergency warrants it.

Avoid applying a tourniquet if possible. If severe bleeding in an extremity suggests the use of a tourniquet, apply a blood pressure cuff.

The nurse should remember that:

1. A direct pressure bandage should not act as a tourniquet.
2. A tourniquet must be periodically released at least every fifteen minutes.
3. No dressing should be applied over a tourniquet.
4. Asepsis must be observed at all times.

Asphyxia. Cessation of breathing from any cause demands:

1. Artificial respiration *at once and at the site of the accident.*
2. Notification of the physician.
3. Maintenance of body warmth. Avoid excessive heating.

continued on page 270



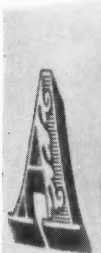
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STANDING ORDERS FOR NURSES

continued from page 268

All nurses should demonstrate ability to apply artificial respiration by currently accepted techniques, and should realize the need for its continuous application until breathing is restored or until careful repeated medical examination advises otherwise.

Shock. Early and adequate shock treatment is life saving. Do not delay.

Common symptoms of shock following injury are pallor, perspiration and rapid thready pulse. Emergency management by the nurse should include:

1. Notification of the physician.
2. Removal of cause. If shock is due to hemorrhage, control it. If it is due to trauma not associated with bleeding, all active treatment of injury should be deferred until shock management has been instituted. Wounds should be covered with sterile dressings to prevent infection.
3. Relief of pain: 1/6 to 1/4 grain (0.010 to 0.016 Gm.) of morphine sulfate, repeated if necessary, or barbiturates as routinely ordered except in injuries to the head or trunk.
4. Keeping the patient warm, dry and on his back with his head low. Avoid overheating.

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RHODE ISLAND MEDICAL JOURNAL

Routine Nursing Care of Injuries

Successful medical management of injuries depends on:

1. Prompt treatment.
2. Meticulous cleaning and dressing.
3. Examination of deep as well as of superficial structures.

To accomplish these aims the routine functions of the nurse should be confined to care of minor wounds as follows:

1. Protect wound with sterile gauze while adjacent area is cleaned with soap and water or solvent.
2. Discard protective dressing and clean wound margins.
3. Irrigate wound with sterile water or isotonic solution of sodium chloride.
4. Apply antiseptic of physician's choice.
5. Apply dry sterile dressing, interfering as little as possible with function.

The nurse should do no more than is actually needed. The following conditions require direct medical supervision:

1. Wounds requiring debridement.
2. Those with obvious or suspected involvement of deep structures.
3. Wounds with edges which do not approximate.
4. Wounds about the head and face.
5. Contaminated wounds requiring tetanus prophylaxis.

Management of Common Injuries. Injuries most likely to be encountered include the following conditions:

1. Abrasions: clean and apply dry dressing. Extensive or deep loss of skin, especially about the fingers and hands, needs medical attention.
2. Contusions: treat with cold compresses directly following injury, later with moist heat. If soreness or disability persists or if deep involvement is suspected, refer to the physician.
3. Lacerations: clean and apply dressing as directed. Any possibility of injury to joints, nerves or tendons should be brought to the physician's attention at once.
4. Puncture Wounds: puncture wounds through the skin need direct medical supervision to avoid or treat severe infection. If superficial, clean and apply sterile dressing.
5. Slivers and Splinters: penetration through the skin by slivers or splinters always carries the risk of an infected puncture wound and should be treated as such. Those lodged superficially and easily removed without added trauma or incision may be extracted aseptically by the nurse.

continued on page 272

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the nose as above. If blood accumulates in the *nasopharynx*, (throat) it can easily be expectorated into an emesis basin, held at the side of the mouth. Advise the patient not to breathe or blow through the nose for an hour or two after bleeding has stopped.

Sore Throat. Patients with sore throat may be given a hot saline gargle if they have a normal temperature. Do not "paint" the throat. Any persistent sore throat or one associated with fever needs medical care by the doctor.

Persons having acute respiratory infections with elevated temperature, cough, sneezing or nasal discharge should be referred to their doctor for proper medical attention.

Available medical evidence at the present time cannot support routine administration of cold vaccines or vitamin preparations as methods of reducing the incidence or severity of acute respiratory infections.

Abdominal Distress. Abdominal distress, nausea or pain, especially if severe or persistent, requires competent medical diagnosis and management.

Equipment and Supplies

Space which can command privacy and which can be kept clean and properly prepared for emergency and routine services by the nurse should be provided in the home. Special attention should be given to heating, light, ventilation and accessibility.

The accompanying check list of furnishings and supplies suitable for a small home dispensary should be augmented by equipment for emergency treatment or other special medical requirements as ordered by the physician or other medical adviser.

Furnishings and Supplies

General Furnishings:

- | | |
|-----------------------|-------------------------|
| 1. Sink | 9. Foot-pedal waste can |
| 2. Instrument cabinet | 10. Waste basket |
| 3. Sterilizer | 11. Storage cabinets |
| 4. Dressing table | 12. Paper towel rack |
| 5. Leg rest | 13. Adhesive rack |
| 6. Cot | 14. Record file |
| 7. Stretcher | 15. Scale |
| 8. Mirror 10" by 12" | |

Instruments and Supplies:

- | | |
|--------------------------------|------------------------------|
| 1. Scalpels | 12. Assorted bandages |
| 2. Splinter forceps | 13. Adhesive plaster |
| 3. Tissue forceps | 14. Cotton |
| 4. Hemostatic forceps | 15. Applicators |
| 5. Bandage scissors | 16. Assorted sutures |
| 6. Surgical scissors | 17. Assorted splints |
| 7. Hand magnifying glass | 18. Assorted jars and basins |
| 8. Syringes | 19. Test tubes |
| 9. Assorted hypodermic needles | 20. Safety razor and blades |
| 10. Assorted surgeons' needles | 21. Hot water bottle |
| 11. Needle holder | 22. Ice cap |
| | 23. Crutches |
| | 24. Tourniquet |

Drugs: (as ordered by the physician or medical

adviser).

- | | |
|----------------|-----------------------------|
| 1. A stimulant | 3. Analgesics and sedatives |
| 2. An emetic | 4. Antiseptics |

Appendix B

Guide for Medical Care in Nursing Homes and Related Facilities

(Approved by the Council on Medical Service of the American Medical Association, the A. M. A. and American Nursing Home Association Liaison Committee, and the Governing Council of the American Nursing Home Association.)

Nursing Homes with Skilled Nursing Care and Nursing Homes with Skilled Nursing and Personal Care

1. Each patient admitted should have a personal physician who knows of the admission arrangements and agrees to assume responsibility.
2. Each patient admitted should come with a complete history and physical examination, or should have such examination immediately upon entering the home, including chest X ray, necessary laboratory work, an evaluation of his potentialities for rehabilitation, at least to self-care, and full orders for treatment. These orders should be kept up to date by daily nursing notes and periodic progress notes by the physician as well as written, directives for care and medication as they are changed.
3. Each patient should have periodic visits by his personal physician. The frequency of these visits should be dictated by the medical needs of the patient.
4. Each patient should be served, in case of emergency, preferably by his own physician.
5. Each skilled nursing home should have a principal staff physician or physicians for consultation in general medical policies of the home. He or they would also be available for emergency calls when the patient's regular physician is unavailable. This physician or physicians would also advise the nursing home administrator in matters pertaining to administrative procedures, nursing care, physical or other restorative therapy, special dietary arrangements, storage and dispensing of medications, and medical records.
6. Each skilled nursing home should make every effort to help patients to achieve their fullest potential for self-care, through treatments and procedures ordered by the patient's physician. These procedures may be as simple as early and progressive ambulation, the correction of sight, hearing, dental or orthopedic handicaps with proper appliances, retraining

in the activities of daily living, the use of heat packs, or lamps, and simple, graduated exercises for strengthening of affected parts. For the more complicated procedures, skilled nursing homes could well arrange for the part-time or visiting services of a professional therapist to provide (under the direction of the M.D.) direct services and to train the home staff in many simple procedures. The home may even maintain special rehabilitation facilities under the supervision of a professional therapist. Rehabilitation procedures which are beyond the scope of the home should be provided through co-operative arrangements with other appropriate community facilities and agencies.

7. Each nursing home should have arrangements with a nearby general hospital for the transfer with minimum delay of any patient whose condition requires it.
8. Each nursing home should maintain liaison with physicians of the local medical society for the purpose of obtaining consultation and guidance on all matters affecting medical care.
9. Each nursing home should consider using consultative services in nutrition and diet therapy provided by the state health department, or by other agencies or persons qualified to perform such service and should assure that all dietary regimes ordered by the patient's physician are carried out.
10. Each nursing home should be conscious of the dental needs of its patients. A dental evaluation of the patient should be included in the health record. The patient should be seen as often as necessary by his own dentist, if available, or by a principal dentist selected by the home.

Homes for Personal Care and Homes for the Aged

1. Each patient should have named in his admission record a personal physician who could be called in case of need.
2. Any patient who is under physician care should come to the home with written orders by his personal physician for continuing his program of medical care.
3. Personal care and old-age homes should have arrangements with a physician to serve as a medical adviser for the home as a whole and to provide emergency care whenever the patient's own physician is unavailable. This physician should serve as consultant on medical care and related matters such as restorative therapy, special dietary arrangements, storage and dispensing of medications, and medical records.

In general, the medical activity envisioned as going on in this type of home and this segment of a larger nursing home is equivalent to that type of medical activity provided in an individual's own home.

4. Periodic health examinations are recommended.
5. The maintenance of good mental and physical health is dependent on supervised physical activity and mental exercise and stimulation. Preventive and rehabilitative programs to this end should be the responsibility of the administration in this type of home. If patients are up and about, every effort should be made to keep them ambulatory, through proper diet, preventive exercises, preventing accidents, interesting and stimulating activities and immediate recognition of any signs of deterioration. Every effort should be made to assist bed-bound patients in becoming ambulatory, through progressive bed exercises, and then assistance in getting up for longer periods each day, unless such patients are bed-bound by physician's orders.
6. Nutrition and diet information may be obtained through consultants at the state health department or other appropriate agencies, and all necessary special diets should be arranged for by the home.
7. The patient's dentist should be known and consulted as often as necessary.
8. Personal care and old-age homes should have arrangements with a general hospital for immediate transfer of any resident who needs intensive medical care.

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BOOK REVIEWS

SURGERY OF THE FOOT by Henri L. DuVries, M.D. The C. V. Mosby Co. St. Louis, 1959. \$12.50

The author has attempted to present a book that would parallel Bunnell's *SURGERY OF THE HAND*. He draws upon many years of experience as a surgeon and teacher.

The initial chapter, *Structure and Function*, is a clear, concise review of the anatomy and function of the different parts of the foot. The succeeding chapters concern themselves with disorders of the nails, skin, fat, ligaments, muscles, tendons, nerves and bones. Unfortunately, the style is such that the presentation is not clear and frequently is confusing. For the student learning his trade, this is not an easy guide book. For the practicing surgeon and orthopedist, the author frequently presents a most one-sided story. The Keller operation for correction of Hallux Valgus and Rigidus is mentioned by the author "as probably the most widely used procedure in the United States." He then mentions all the bad points and dismisses the operation as a bad procedure. The DuVries modification of the McBride operation is then detailed for 7 pages. The author claims 90% excellent, 8% good, and only 2 failures in 1200 cases.

The chapter on *Tumors, Cysts and Exostoses* is a very brief summary, again frequently confusing. On page 135, Osteoid Osteoma is described as "a benign tumor secondary to trauma, such as subungual exostosis, calcaneal spur, and exostosis on the dorsum of the first metatarsal, first cuneiform, and navicular bones, and also an uncommon idiopathic type which may assume bizarre patterns."

The treatment of ankle sprains makes no mention of the basket weave strapping taught by Gibney and reborn in World War II and widely used since.

For the practicing surgeon and orthopedist, this book lacks the conciseness and orderliness of a Campbell's *ORTHOPEDIC SURGERY*.

STANLEY D. SIMON, M.D.

STRABISMUS OPHTHALMIC SYMPOSIUM II. Edited by James H. Allen, M.D. The C. V. Mosby Co. St. Louis, 1958. \$16.00

The proceedings of the second Symposium on

Strabismus sponsored by the New Orleans Academy of Ophthalmology constitute this volume. Eight prominent authorities present topics of their own choosing and special interest which in general represent a repetition, amplification, and in some instances clarification of similar material published in similar form following the original symposium six years previously.

The contents are a curious mixture of anatomical facts and theoretical speculation emphasizing the wide chasm between the practical management of a child with crossed eyes and our rudimentary basic knowledge of the anatomical and physiological facts upon which that treatment is based.

Nevertheless, this is by far the best strabismus source and reference book available. It is best digested in small portions and when time permits of speculative reflection. This book has no appeal or value for non-ophthalmologists.

JOSEPH L. DOWLING, JR., M.D.

LIVING BEYOND YOUR HEART ATTACK by Eugene B. Mozes, M.D. Prentice-Hall, Inc., Englewood Cliffs, N. J., 1959. \$3.50

This is a very good, clearly written book that is sensible and not alarming. Reading it could benefit everyone over the age of forty and it would be very helpful to the coronary patient and his family. It might stave off a cardiac neurosis which is often more harmful to the patient than the coronary attack itself.

I believe that a copy should be available in every public library and that doctors would do well to recommend this book to their patients.

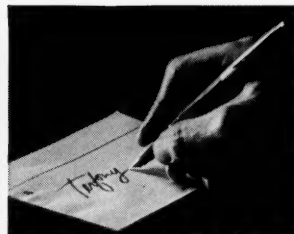
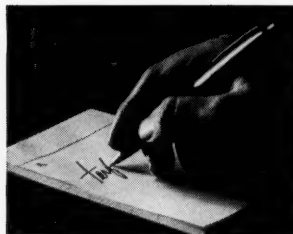
AMY E. RUSSELL, M.D.

AN ATLAS OF NORMAL RADIOGRAPHIC ANATOMY by Isadore Meschan, M.D. with the assistance of R. M. F. Farrer-Meschan, M.D. 2nd ed. W. B. Saunders Co., Phil., 1959. \$16.00

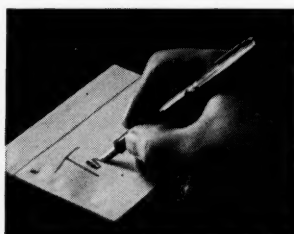
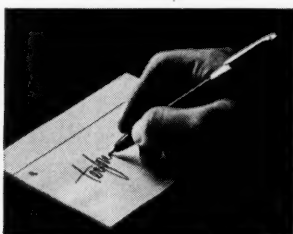
Meschan's *Textbook and Atlas of Radiographic Anatomy* is designed by its author for medical students and general practitioners interested in radiographic technique, residents in radiology and X-ray technicians. All of these can profit from using this book.

One might feel that the average X-ray technician

concluded on page 278



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BOOK REVIEWS

concluded from page 276

cian would find its anatomic descriptions somewhat too detailed. The radiologist, on the other hand, would find most of the information in his own more specialized texts, especially since the author, of necessity, has had to borrow from other sources for some of the detailed techniques. However, both the technician and the radiologist could still use the book to advantage.

The textbook has 758 pages. It includes chapters on all the various parts and systems of the body. It includes description of the more commonly used complicated techniques, such as arteriograms, angiograms and cervical myelograms, among others.

Each chapter shows the usual radiographs for the part of the body involved, diagrammatic sketches of the radiographs, sketches of the positioning and a moderately detailed anatomical description of this part. This format serves the reader well. One might suggest that in some places, that photographs of positioning and labeled radiographs might serve better than some of the sketches. One might also suggest that the sketches dealing with the skull radiographs be made larger. Instead, they are actually smaller than those for the simpler long bones. These, however, are small details and the book should be considered quite satisfactory for the purpose for which it is intended.

MANUEL HORWITZ, M.D.

PAIN AND ITCH NERVOUS MECHANISMS, Ciba Foundation Study Group No. 1, in honor of Y. Zotterman, edited by G. E. W. Wolstenholme and M. O'Connor, 120 pages, 41 illustrations. Little, Brown and Company, Boston (1960). \$2.50

A small book containing a great deal on highly technical investigative topics, by a group of scholars gathered in a London conference, March 10th, 1959.

The subjects are: The significance of the peripheral anatomical arrangements of the nerves which serve pain and itch, by Weddell, Palmer and Taylor—The peripheral nervous mechanism of pain, by Zotterman—The sensory functions of the non-myelinated afferent nerve fibres from the skin, by Douglas and Ritchie—A single unit analysis of cutaneous receptors with C afferent fibres, by Iggo—Some patterns of activity in the central sensory pathway with possible relevance to the problem of pain, by Gordon—The thalamic and cortical reception of afferent impulses from the tongue, by Landgren—The peripheral mechanism of itch in man, by Arthur and Shelley—Studies on the mechanism of pain in trigeminal neuralgia, by Kugelberg and Lindblom.

F. RONCHESE, M.D.

RHODE ISLAND MEDICAL JOURNAL

METABOLIC CARE OF THE SURGICAL

PATIENT. By Francis D. Moore, M.D., Moseley Professor of Surgery, Harvard Medical School; Surgeon-in-Chief, Peter Bent Brigham Hospital, and illustrated by Mildred Coddington, A.B., M.A., Surgical Artist, Department of Surgery, Harvard Medical School. W. B. Saunders Company, Phil., 1959. \$20.00

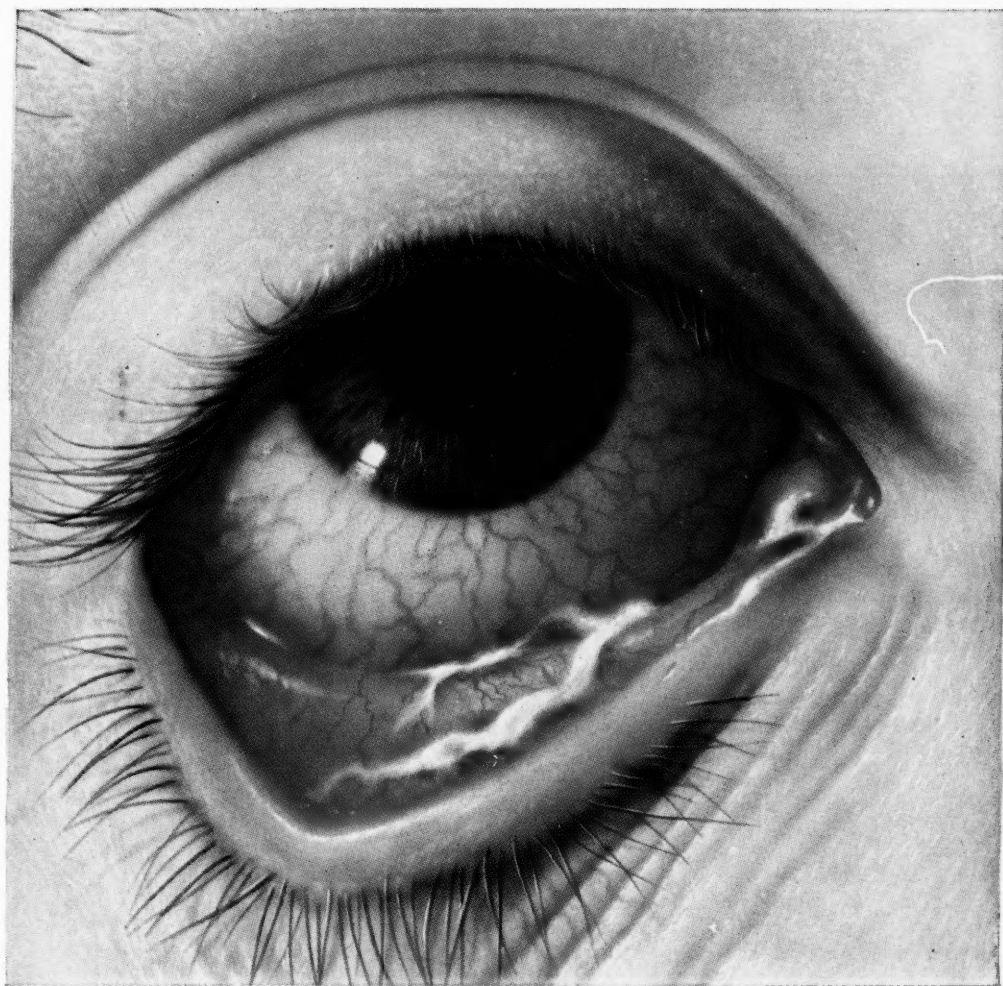
As has been noted before in these columns, the surgical research laboratories of the United States have been a major, if not the outstanding source of contributions to basic human physiology in the past two decades. One of the most pregnant sources of this progress has been the laboratory of Doctor Francis Moore, Moseley professor of surgery at Harvard and surgeon-in-chief at Peter Bent Brigham Hospital in Boston, Massachusetts. His work on steroid physiology, particularly as related to response to major surgery, has been fundamental and in the very vanguard in this field.

This massive volume epitomizes his work to date. The present reviewer is constrained to predict that this work will stand as one of the major landmarks of the surgical literature. This weighty tome of 1,011 pages, divided into six parts, covers the following subjects: the normal patient; blood volume; body fluid and electrolyte; loss of body substance; visceral disease in surgical patients; and fractures, wounds, and burns.

Besides giving theoretical and didactic discussions, the author presents and analyzes 32 cases, exemplifying the various problems. There is a special appendix containing surgical diets and parental supplements. The bibliography contains (in round figures, as they are not numbered) an incredible 1,800 references! In his introduction Moore quotes from William Beaumont's little classic on gastric physiology: "The present age is prolific of works on physiology; therefore in offering to the public another book relative to an important branch of this science, it will perhaps be necessary to assign my motives." In reply Moore gives as his motives the need to bring together in one volume a "distinct area of knowledge that has grown from many sources in the past fifteen years," and "to provide from this knowledge the data that are of direct bedside assistance in the care of the sick." He has fulfilled these objectives without stint and with a success beyond cavil.

This book is not easy reading, nor is it always successful in making readily intelligible to the uninitiated the masses of factual data assembled therein. Yet its long-term influence on the routine preparation and postoperative care of surgical patients can be predicted without reservation.

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1. Lippmann, O.: Arch. Ophth. 57:339, March 1957.
2. Gordon, D.M.: Am. J. Ophth. 46:740, November 1958.

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THE WASHINGTON SCENE

A Summary Report from the Washington Office of the American Medical Association

DEFEAT OF THE Forand bill in the House Ways and Means Committee highlighted developments on the issue of legislation to provide more Federal health care for the aged.

The Committee voted 17 to 8 on March 31 to shelve the Forand bill which would increase Social Security taxes to provide surgical benefits and limited hospitalization and nursing home care for Social Security beneficiaries, except the disabled.

However, the issue remained very much alive.

The Eisenhower Administration and Congressmen were separately considering various alternative proposals to provide additional health care for the aged, but outside the Social Security system. And the action of the House Committee did not rule out the possibility of Forand-type legislation being brought up in the Senate later this session.

The House Committee vote against the Forand bill came during the drafting of an omnibus measure of revisions in the Social Security program. The Committee voted tentatively to bring physicians under Social Security.

The Committee also favored elimination of the requirement that a disabled person must be 50 years or older to be eligible for Social Security payments.

Arthur S. Flemming, secretary of Health, Education and Welfare, said the Administration was considering a plan for Federal payments to the states to help needy old persons buy private health insurance on a voluntary basis. He said he hoped the plan would be ready for submission to Congress by late April.

Sen. Jacob K. Javits (R., N. Y.) and seven other Republican Senators introduced similar legislation in the Senate. The bill called for the Federal government and states jointly putting up about \$1 billion a year to help persons 65 years and older, and their spouses, to buy private health insurance. The coverage would include physicians' care in home and office, diagnostic services, hospitalization and nursing home care.

Another plan being considered by some other members of Congress would broaden the Federal-State public assistance program to provide more health care for needy older persons.

Both President Eisenhower and Vice President Nixon reiterated their opposition to any compulsory health plan such as the Forand bill. The President told a news conference that such plans would

be a definite step toward socialized medicine. He proposed that medical care for the aged be improved through further development of voluntary health insurance programs.

Vice President Nixon gave his position in a letter to physicians who had communicated with him about the matter.

"The Vice President, throughout his career as a public official, has consistently opposed and will continue to oppose any compulsory health insurance program," the letter said. "This, of course, includes the Forand bill. . . ."

"He believes that the best way to handle the problem of people over 65 who do not have and cannot afford health insurance is through a program which will enable those who desire to do so to purchase health insurance on a voluntary basis."

On the other side, three candidates for the Democratic nomination for President—Sens. John F. Kennedy (Mass.), Hubert H. Humphrey (Minn.) and Stuart Symington (Mo.)—said they would push for passage of Forand-type legislation.

The AFL-CIO continued its all-out campaign in support of the Forand bill. Leaders of the labor union repeatedly attacked the American Medical Association for opposing the bill.

One of the attacks prompted Doctor Louis M. Orr, Fla., to protest in a letter to AFL-CIO President George Meany against the union's "deliberate distortions of the truth, perversions of the truth, and outright untruths."

Doctor Orr charged that allegations in a political memorandum of the AFL-CIO's Committee on Political Education (COPE) "not only . . . attempt to impugn the motives and competence of the nation's physicians, but they seek to mislead labor's rank and file, the members of Congress, and the American people as a whole."

"When the A.M.A. opposes any legislative health measure, it does so because its members believe that it would lead to poorer—not better—health care for the people of this country," Doctor Orr said.

Senate Republican Leader Everett M. Dirksen (Ill.) also defended the A.M.A. as well as the Eisenhower Administration, against the attacks when AFL-CIO leaders repeated them in testimony before the Senate Subcommittee on Problems of the Aged and Aging.

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RHODE ISLAND MEDICAL JOURNAL

THE WASHINGTON SCENE

concluded from page 292

Sen. Dirksen denounced them as "gratuitous slurs," "stinking statements," "invidious . . . insane charges" which constituted "an absolute disservice to the country."

Doctor James A. Appel, Lancaster, Pennsylvania, a member of the A.M.A. Board of Trustees, testified before the Senate Subcommittee that the greatest health problem faced by older people is "their isolation from the rest of society." He said:

"The health problems of the aged can only be solved within the context of total health. They involve far more than hospitals or a doctors' care. They involve the older person's other requirements in life, whether these be housing, recreation, community understanding and acceptance, the right to be useful, the courtesy of being treated as individuals, or the opportunity of living as self-reliant, respected members of society."

As for an aged person being denied medical care because of a lack of money, Doctor Appel said emphatically:

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1. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A. (Scient. Ed.)* 48:380, July, 1959. 2. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A. (Scient. Ed.)* 48:384, July, 1959.

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EARL J. MARA, M.D.
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PRESIDENT'S MESSAGE

IN THIS YEAR of 1960 — known as a “political” year — we are again seeing printed criticisms and hearing loose statements to the effect that the American Medical Association does not speak for the American doctors, and even at the local level, that the Rhode Island Medical Society does not reflect the thinking of local physicians.

Every physician should recognize how dangerous such generalizations are, and every physician should be in the forefront in challenging such attacks.

We individually practice medicine to the best of our ability. We also recognize fully the importance of the organization of physicians in local, state and national medical associations in order that the art and science of medicine and the betterment of public health may be promoted. And, as our own by-laws state, we also seek “to promote friendly intercourse among physicians, and we seek to enlighten and direct public opinion in regard to the problems of medicine.”

There is no more democratic organization in the nation than so-called “organized medicine,” and every physician should be aware of it.

At the local level the physician has complete authority to voice his views through his county or district medical society. Here the policies of medicine must and should be formulated. As with state government, the local district elects designated representatives to convey its opinions to the state group. Thus we have our House of Delegates, with one representative for each twenty active members, or major fraction thereof, of each district society.

The House of Delegates of your state medical society seeks to present the thinking of the physician population in Rhode Island. To this body you have given legislative power to determine the general policies for the medical profession. Every physician, therefore, should take a very active interest in work of the House of Delegates, should know what policies it enunciates in the interest of every individual member.

Unlike the United States Senate which has two representatives for each state, regardless of state population, the House of Delegates of the American Medical Association has one delegate for each one thousand physician members, or major fraction thereof, in each state. Thus medicine seeks to have spokesmen in proportion to the Medical population of the nation and thereby to secure a conclusive opinion of what the majority of American physicians want as sound policy for the advancement of medicine and public health in this nation. Any member of the A.M.A. may attend the meeting of the House of Delegates at either the annual or the interim meeting.

Your Society does not solicit members. The physician applies for membership, and with the acceptance of that request there is a corresponding obligation placed on him to give active support to the organization by regular attendance at its meetings, and by a willingness to accept committee and other assignments in the interest of the Society and the public generally.

In the year ahead we may anticipate that there will be a continuance of the pressures for control of the medical profession by third parties. If concession after concession is made to various groups — management, labor, government, insurance, press, politicians — there is bound to be reached a point at which the private, confidential and sacred relationship between the doctor and his patient will cease to exist. Only through the individual doctor's zeal and application to the principles of organization of his local, state and national medical associations can this threat to the physician-patient relationship be eliminated.

The Rhode Island Medical Society does speak for the medical profession of Rhode Island, and the American Medical Association does properly reflect the thinking of the majority of American physicians. I urge you not only to keep that fact in your mind, but also to be ready to emphasize it to your friends, your patients, and the public generally.

YOU are the Rhode Island Medical Society and the American Medical Association!

EARL J. MARA, M.D., *President*

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of Providence, Rhode Island
Vice President of the Rhode Island
Medical Society, 1960-1961



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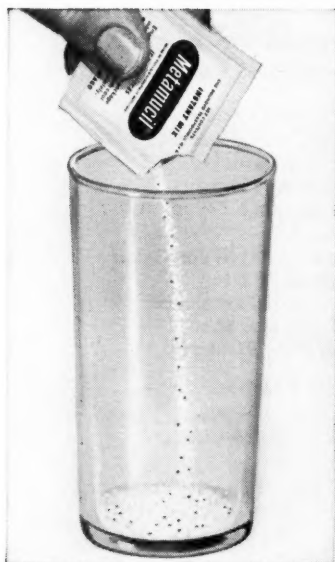
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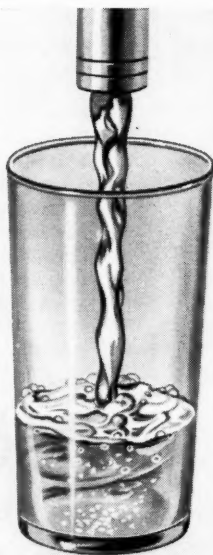
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